

( STAMPED.....SIXPENCE.  
( UNSTAMPED..FIVEPENCE

Wales, £54 : 50 East Snafell, £3 : 20 Roskearnoweth, 18s.  
An OFFER WANTED for Crenver Wheel Abraham.  
Mr. TREGELLAS is a BUYER of Santa Barbara and North Shepherds, at close market prices.



## Original Correspondence.

## PROTECTION OF INVENTIONS AT INDUSTRIAL EXHIBITIONS.

SIR.—The notice that has already appeared in the *Mining Journal* of the bill now before Parliament "for the protection of inventions and designs exhibited at certain industrial exhibitions in the United Kingdom," and of the bill for effecting similar objects as regards the Dublin Exhibition, 1865, are truly to be characterised as wholly inadequate to the accomplishment "of the end proposed," which has been understood by all interested as being what the titles of these bills seem to intimate—the protection and exclusive reservation to those inventors or designers who exhibit their unpatented or unregistered productions at working men's and other industrial exhibitions of the right to secure to themselves patents or registrations, in order that, if possible, they may thereafter be enabled to reap the just reward of their efforts for the advancement of the practical arts, and thus be placed, to some extent, on a par with such of their brother exhibitors as may contribute original pictures, drawings, photographs, statues, or ornamental designs, who can already, by virtue of the ordinary law of the land, obtain protection and copyright at an almost nominal cost, so that such exhibitors of inventions, by their own praiseworthy efforts, may secure a fair chance of being the means of raising themselves and their families to comfortable competency, or perhaps to fortune, according to the trade value of their respective inventions or designs, and that, too, just in the same proportion as the public may be practically benefited.

Keeping this laudable aim in view, we shall, if we look to these bills, be surprised to find, that by section 2 of that first mentioned, only such exhibitions as the Board of Trade shall think fit to allow are to be enabled to avail themselves of the new law, the benefits of which are by sections 3 and 4 (and similar enactments are contained in the Dublin Exhibition Act) declared to be that the exhibition of any unpatented invention or unregistered design shall not, by the fact of such exhibition, prevent valid Letters Patent being obtained, or a legal registration of a design being effected; provisions, as you say, both "negative and nugatory," inasmuch as they afford no safeguard against what we know from experience may be expected to take place—namely, that dishonourable persons will visit an exhibition, call from it desirable improvements, and having the money ready to satisfy that (according to British law) great test of inventive genius—Fees—at once proceed to the Patent Office, and sue out a patent, on the ground that it has been invented by them, or communicated by Mons. Mensonge, of Paris, a course perfectly open to be taken by any such persons under the present state of the law, and not liable to the chance of prevention, except by continual watching of gazettes and patent lists, and resort to expensive opposition proceedings. Neither will the Act afford any safeguard against an intentional or even an inadvertent publication after the exhibition is shut up, or against a dishonourable man adopting any exhibited and unpatented or unregistered invention or design in his workshop, warehouse, or otherwise, after the closing of the exhibition, so as by such adverse publication to take away the right to apply for a patent, or effect registration; because the amendment introduced in the Commons Committee only provides against the effect of adverse use "during the period of such exhibition." Moreover, this amendment of section 3 does not apply to registrable designs, as to which any use other than mere exhibition (if that be a use) will not be found provided for by the enactment. In regard to the Dublin Exhibition Act, I might remark that this enactment as to the adverse user is not, as far as I can learn, inserted in it. The bill is now before the House of Lords, and, it is to be hoped, will be further amended in that House.

It is to me passing strange that a measure of provisional protection for exhibitions of inventions and designs modelled upon that passed for the Great Exhibition of 1851 could not have been adopted; and I feel inclined to submit, through the columns of the *Mining Journal*, a proposal for a form of enactment for consideration, though I must confess I do not see any truly satisfactory way of dealing with this question but that of cheapening the provisional protection for Letters Patent, and amending the Patent Law.—Temple, March 15.

F. W. CAMPIN.

## COLLIERY ACCIDENTS—SAFETY-CAGES.

SIR.—It is commonly said that safety-cages are unnecessary when attention is paid to the state of the rope and other appliances for winding. The late accident at the North Seaton Colliery affords no confirmation to the truth of the above remark. For where should attention to the state of the winding gear be expected to be given if not in the district in which that colliery is situated? And yet, notwithstanding all the care and attention we are entitled to suppose has been bestowed on it by the colliery officials, the accident occurred, which is thus narrated in the *Mining Journal* of March 4:—

"A rope broke at North Seaton Colliery on Tuesday, and the cage was precipitated to the bottom. Fortunately no human beings were in the cage at the time of the accident. The whole of the men and boys had been let down the pit by the same rope that morning."

In fact, no human skill can tell when a wire-rope is about to break, and, therefore, safety-cages are imperatively called for where iron-ropes are used.—March 14.

THE MINER'S FRIEND.

## SLATE, SLATE QUARRIES, AND SLATE COMPANIES.

SIR.—Permit me briefly to notice Dr. Bower's remarks in last week's *Journal* on my "Few Words," not brought out by, as he misquotes, but by "A Man of Experience." The ludicrous strikes me so differently, that he may perchance find the fact "odd" that my pamphlet combines "geological knowledge with practical details of quarry working." Coming from one who has seen anything of a quarry, his remarks on the few points of difference mentioned by me seem, perhaps, strange rather than odd. First, as to colours and descriptions of slate, a few words will make palpably plain the discrepancy in our statements he fails to see. In Dr. Bower's pamphlet (page 6) he says—"The following are the colours and qualities of slate made in Wales:—1. Green; 2. Blue; 3. Red." I say (page 10)—"Those but imperfectly acquainted with slate often name only three colours—red, blue, and green—but this is a very superficial, inaccurate description. The real colours of slate are six—black, red, purple, blue, grey, and green—all differing sensibly in appearance and properties, with some distinction as to the localities where they are found." Further, in describing each colour, I state that all are more or less found in Wales; the purple of the great Penrhyn Bangor quarries being the principal colour left out by Dr. Bower, though in two or three subsequent pages he mentions "grey slates," so that he appears aware there are such, though omitted from his list of colours. I am aware the Bangor price lists call their purple slates blue, to mark them as not red. But, instead of calling these purple slates "Bangor blues," it is better to name their real colour.

As to the dip of the Merioneth veins (where I remark in another column of this week's *Journal* he is corrected by your correspondent Mr. Jenkins) I am surprised at his persistence in so grave an error. He says (page 8)—"The veins in Merionethshire are chiefly at an angle of 4° to 5°, or nearly horizontal;" whereas in page 7 I correctly state the dip as nearly 1 in 1, or at 45° angle, as in the great veins of the Oakley Quarries, and most others in the county. Will the Doctor name the quarries he says he has seen in Merionethshire where the dip is 4° to 5°?

As to 30 or 40 yards being a pretty near average of the top, bastard, and inferior rock over the "best paying slate," I am aware, as I stated in the *Journal* of March 4, that the depth varies infinitely in different places. I have in many spots seen slate work wonderfully well almost close up to surface; but balancing cases of excess with defect, I think those best acquainted with the matter practically would decide this average to be as near the truth as such an approximation can be of the depth at which the best slate rock is reached.

As to North Wales Slate Deposits, the Doctor quotes only half my sentence, which garbles the sense. I say (page 6)—"They lie principally in the neighbourhoods of Snowdon, in Carnarvonshire, and of Cader Idris, in Merionethshire."

Dr. Bower says—"The language of my essay implies that much money has been lost in slate companies." I state—not "by implication," but plainly—the notorious fact that very much money has been thus lost, and it will be found that very much more will be lost in the winding-up of the numerous insolvent companies now trembling on the verge of ruin. I cannot form an idea whether more or less has been lost in slate than in "gold, silver-lead, &c." There has been an awful swindling of the public in each and all. Instead of conjectures on this doubtful point, my pamphlet undertakes to show some of the real causes of failure in unsound companies, and how to make a really good slate quarry, perhaps, the most lucrative investment in the market.

A MAN OF EXPERIENCE.

P.S.—In reply to Dr. Bower's "P.S.," we can best carry on any future

correspondence on the interesting subject of slate on our present footing, for the edification of the numerous readers of the *Mining Journal*.

March 11.

## COLLIERY WORKINGS IN SOUTH WALES.

SIR.—When the colliery company in question requested me to attend one of their board meetings, I there learnt their position—they desired me to go down to Wales and examine their colliery. On my return to London I told them the state of their property; I also informed them it would take from 1500l. to 2000l. to open out the new works, and put their colliery in working order. The board then showed me a report signed by three of the "Local Fraternity" (a copy of which I enclose), in which it was stated it would take 6500l. to open the works. The report then went on to state, that after the company had spent this 6500l., they may safely calculate on getting "6d. per ton profit on the coal;" and if they raised only 1000 tons of coal per day! it would amount to several thousands per annum. Well, I was authorised by the board to carry out what I had proposed, with this injunction, "the company was very poor, and I must use every possible economy in carrying out the works."

Well, Sir, such was the state of the colliery and machinery generally, that Mr. Evans, the Government Inspector, came to stop the colliery; and it was only on my explaining what I intended to do, and his courtesy, that he permitted me to go on at all. In a short time I got the colliery to work, and on May 1, 1863, I received the following:—"The board are glad to perceive the commencement of a diminution in the costs, as compared with a similar quantity of coal produced last year," or the year before I took charge of the works, when the colliery was in full operation. But, further, Mr. Naysmith has given us his figures as to the cost of cutting the coal and putting it into the trucks at 4s. 3d. per ton, and the selling price at 7s. 6d. per ton. A reference to the *Journal* will show the selling price at Cardiff as 8s. 6d. per ton; no coals were sold under that price. Now, the absolute cost of cutting the coal, as paid to the colliers, long weight, was 1s. 2d. per ton, or:—

Selling price at Cardiff	per ton	8s. 6d.
Cost of cutting	per ton	1s. 2d.
Timber for colliery (exclusive of repairs)	0	4
Haulage	0	2
Royalties	0	10
Railway charges	0	2
Salaries at the works	0	2
Stores and contingencies	1	6
Profit, from 1s. 6d. to	per ton	2 0

Now, if I am rightly informed, the board declared a dividend at the rate of 2½ per cent. at the end of the same year; the first and last dividend, I believe, ever paid to the shareholders. Some explanation of this is certainly required in reference to the dividend. This truthful junior stated in a previous letter that we were only raising from 150 to 200 tons of coal per week—it now comes up to "200 tons per day." Will this same authority permit me to state that I found 17 horses in one of the pits under the management of his sire, and only raising "138 tons of coal per day." Now for the "junior's" colliery financial knowledge. Practical men always charge the opening of new works and alterations to capital account, the cost of which I estimate at about 2000l. for putting the works in order. This he has managed to put to the cost of getting the coal. May I ask him, by the same "rule," the price per ton of the three "lamps of coal at his Bedlam Colliery?" Certainly this is a "fair question."

Throgmorton-street, March 14.

GEORGE SHEPHERD, C.E.

## GREAT WHEEL VOR.

SIR.—The progress this extraordinary mine is making will be seen from the following statement of the actual sales of black tin made during the last year, as recorded in the *Journal*. The mine began to make regular monthly sales in March last, and although only one-third of the tin discovered has been dressed and sold, yet the actual sales have increased over 50 per cent.:—

BLACK TIN SOLD.			
1864—March 14	Tons	43	2 3 10
April 14	43	12	22
May 14	51	6	8
June 14	47	9	2 12
July 16	47	17	13
August 18	47	13	0 10
1865—September 14	Tons	50	6 2 8
October 14	50	5	3 8
November 17	51	7	1 18
December 15	58	2	1 22
January 14	60	6	3 6
February 14	67	9	3 9

The March sale for the present year should appear in this week's *Journal*, and I anticipate it will be nearly, if not quite, 70 tons. The total of the above sales for twelve months will amount to about 640 tons, and if to this be added the large mass of tin discovered in the mine, but not yet taken away, it will be seen that Great Wheel Vor has yielded a quantity equal to nearly one-fifth of the whole of the tin produced in this country during the last twelve months. The course which the committee have adopted of adding so largely to the reserves, instead of increasing their present sales, is most judicious, as they thus forbear from overweighing a depressed market, and thereby get a better price for what they do sell, and hold in readiness large quantities, to be availed of whenever the trade in tin and tin-plates revives, which no doubt it will do as soon as the war in America terminates. Even with the lower prices of tin which have ruled lately the above sales have yielded upwards of 40,000l., and whenever the price of tin rallies to what it was two months ago the cash receipts and the dividends in Great Wheel Vor may be easily doubled. There is evidently a long and increasingly prosperous future for this mine.

The approaching meeting will, no doubt, be the most satisfactory one which has yet been held, and although in the present state of the tin market it may not be deemed advisable to increase the dividend, yet there can be no doubt but that large dividends will reward the shareholders ere long.

AN ORIGINAL SHAREHOLDER.

## PROPOSED INTERNATIONAL ASSOCIATION FOR THE DEVELOPMENT OF PRACTICAL KNOWLEDGE—NO. II.

SIR.—If by seeing we see not, and by hearing we hear not, neither do we understand, it is highly important that we should investigate the cause of our mental and social darkness, and endeavour to remove the beam from our own eye, that we may brush away the mote which is in the eye of our brethren. In my last letter I pointed out the desirability of erecting, if possible, an International Industrial Training Institution, and thought it was probable that two or three persons might have taken an interest in such a project. But we know it often occurs that "fools rush in where angels fear to tread," hence the caution necessary in throwing out original ideas whether calculated to raise or depress the well-being and social progress of mankind; and I hope that no correspondent will attempt to answer these letters who has not thoroughly made himself acquainted with the law that governs first principles; such discussion only ending in wasting your valuable space, and the time of your readers. I have had extensive experience for this last quarter of a century in organising associations of men, and I believe in every instance where I have organised an association for any practical and useful purpose it has emanated from two or three advanced minds, indeed the fewer the better, for experience has convinced me that majority will never be a very important element in the governing of the affairs of men. It is stated "By their works shall they be known," and I would ask, Is there a single town in England at this moment that has been heated, lighted, drained, watered, and sewered, or even protected from fire, on sound scientific principles? And is not the clamouring of the various boards of health (alias boards of death) a specimen of the ignorance which prevails in our country of the laws that govern celestial and terrestrial bodies. But it is stated in history that "The desire of all nations shall come;" and, further, that "A nation shall be born in a day," and the mass of mankind are under the impression that this very mysterious foreboding is now rapidly coming to pass. I have no doubt that John Howard Kyau (the patron of Kyau's timber) possessed a mind capable of penetrating the philosophy of life as deeply as any man before or since his time. Poor Kyau sent 200 copies of his book, which he published 30 years ago, to the most eminent men of that time. As a matter of course, not a single reply was made to him, either by persons in England or on the Continent. Now, I contend that there is more sound practical philosophy in Kyau's book than any other which has been published since that time; in fact, Kyau had anticipated nearly every important invention up to the present hour, and I submit that it was from the most trifling error in optics that he did not succeed in shewing for ever the national palaver which has mystified the world. Kyau found it impossible to make head against the physical combination of hard-headed, obstinate mathematical formulae; and I see this last week that several important debates have arisen as to the law by which Giffard's injector operates in forcing the cold water from the tender into boilers by the aid of steam. Now, I contend that the philosophy of the injector will never be solved by any mathematical calculation. No doubt when these mathematical philosophers discover the simplicity which governs the law of Giffard's injector they will stand amazed at their own stupidity and the mathematical gullibility of mankind. But I contend further, Sir, that on the same law which operates through Giffard's injector is based the true philosophy of all action and reaction throughout Creation, which governs celestial and terrestrial bodies, and I have taken some considerable pains, and been at a great expense, to practically demonstrate that the principle involved cannot fail to solve the most important problems of philosophy in our time. Experience proves that it is useless to throw pearls before swine, and it will be preferable to let those mathematical physical philosophers grope on a little longer in the dark. Experience also proves that the most valuable prescriptions remain unappreciated unless the guinea fee accompany the advice. But to business.

Since my last letter, I am glad to inform you that I have received instructions toward the whole of my plans to a gentleman, who has been chosen for the object of carrying out this International Elementary Training Institute, and I have no doubt before this letter is in print that the transaction will be closed, and active operations commenced; thus, we shall avoid a waste of time that would be involved in useless debate or superficial palaver. I shall prepare a prospectus embracing the whole of my plans forthwith, and a medal will be struck to commemorate the inauguration of the association. The capital will be 50,000l., in 50l. shares or nominations. Each holder of five shares may secure a piece of land, and build a house near the proposed college. The distance is within six miles of London, and a railway runs through the estate. The land is on a gentle incline of 1 foot in 30, and will be let at a reasonable price. Two springs of water run through the estate, and it may be reached from Farringdon-street station in a little over twenty minutes.

Steps have also been taken to-day for the practical arrangement of some of the important branches of philosophy, so that the institution may avail itself of every important discovery up to our time, and the practical adaptation of every useful invention

which may tend to shorten labour and utilise the minds of students for the realisation of useful and practical results; and as coal and iron will form the most important part, and stand at the foundation of this institution, it is important to all iron and coal masters that they take an interest in its development. Had it not been for the ignorance which pervades the mining districts, and the reckless waste of power which is prevalent on all sides for the want of knowledge, the promoters of this institution would never have wasted their time and money for the accomplishment of this important work.

AN ALPHEMITE.

## THE PROPOSED APPLICATION OF LIMITED LIABILITY TO COST-BOOK COMPANIES.

SIR.—Seeing from the notice in the *Journal* that Mr. Palbrook proposed, by his "Treatise on Companies Limited by Guarantee," to form a Limited Cost-book Partnership, I was induced to purchase a copy. Doubtless many of your readers are acquainted with his proposition, but to those who are not an explanation of the nature of the partnership cannot fail to be interesting. The author, by an ingenious contrivance, which appears to be perfectly legal, projects his company without any fixed amount of capital, as in a cost-book company. He simply divides the company into a certain number of shares, and leaves the members themselves to make the calls at their quarterly meetings, precisely similar to the manner in which a cost-book company is conducted. This is undoubtedly better for shareholders than leaving the power entirely in the hands of directors. He proposes, also, to allow any shareholder, on payment of his calls, to relinquish his shares to the company, thereby if dissatisfied with its prospects he can free himself from all future liability. This is one of the principles of the cost-book company, and one, as the author justly observes, which many shareholders in limited companies would be glad to adopt in their articles if it were possible. The foregoing conditions are a sample of those of a cost-book company, but then the author brings his ingenuity into play, and attaches limited liability to the company by means of the form of company allowed under the Companies Act, as a company limited by guarantee. The limitation of liability is effected in the following manner:—"The company being registered becomes a corporation, and therefore the members individually cannot be sued by creditors for the debts of the corporation. It will be recollected that in a cost-book company, which is not registered, every shareholder is personally liable for the debts of the company, and may be sued at any time by any creditor, hence the limited liability of a cost-book company."

In the company now proposed, the company as a corporation must be sued, and has no assets or effects sufficient to satisfy the creditor's claim he can sue the company, and get at the shareholders individually. This is by winding-up the company, and the limitation of liability really comes into play. To each share of a company is attached a guarantee of a stated amount, and no more. For instance, if the company is attached to 2000 shares, with a guarantee fund of 1l. per share; a shareholder holding five shares, on paying up this guarantee of 1l. per share, or 5l., is released from all liability, whether the holders of the other 1995 shares can pay up or not. Now, in a cost-book company a holder of one share only is liable for every debt of the company if the other shareholders cannot pay. Thus, shareholders in Mr. Palbrook's company will always know their liability. It might be said the merchants of Cornwall would object to this, but on a closer examination it will be found that any objection from them would be groundless. This guarantee fund cannot be called up by the company, but is only called into being on the company being wound up. In the company being described there would always be a fund of 2000l. to satisfy the creditors' claims, and which they cannot be deprived of; therefore, they have only to take care that they allow no credit to the company, and they cannot hurt much, because the company could not be wound up, as in a company having its shares fully paid-up, and leaving nothing to pay them. At the same time, they may safely rely on the whole 2000l. being paid, because there will not be that huge debt of unutilised liability to induce holders of shares to register them in the names of paupers. This mode of applying limited liability to cost-book companies is certainly most ingenious, and, I agree with you, worthy the attention of all connected with mining.

T. L.

## MANAGEMENT OF MINES.

SIR.—I am truly sorry to look at the management of several mines within some miles of this neighbourhood; and, after a careful investigation into its constitution, am led to enquire, do those shareholders who live at a distance know how their mines are managed, and money spent? I imagine not. Here are mines raising ore enough, one would think, to place them well up in the Dividend List, but in reality have not only not paid for years, and some not at all, but have been making calls to meet the expenses. In nine cases out of ten this fault is in the management, which those shareholders in Glasgow, London, or elsewhere know nothing of by merely sending an individual as a representative, with proxies, to attend the company's meetings, and by trusting to the managers' reports. We see a prospectus issued for the working of a mine, 30,000l., or 40,000l. stocked, or to be stocked, for the new machinery of different descriptions is erected and worked for a year or two in high spirits, when, all unexpectedly, we see the mine and machinery for sale—money all spent, of course. Such cases happen under both the Limited Liability and Cost-book systems, and is generally followed by mismanagement, which will be explained by the following illustration:—"There may be some parties in the neighbourhood, or within a range of (say) 20 miles, who are men of influence, and perhaps are the holders of 100 or 200 shares each. Mr. A. may have a foundry, and want to dispose of heavy castings in the shape of engines, pumps, &c. Mr. B. a timber merchant, who has a large quantity of timber on hand for sale. Mr. C. will be a coal merchant, who is always prepared to supply fuel for getting up the steam. Mr. D. is a general mercantile 'agent,' who has plenty of oil, grease, nails, &c., to forward at the first opportunity, and perhaps would like to be an office bearer under the company. Mr. E. is an engineer, who wants a billet as such at the tune of 2l. or 3l. per month—just to call it, may be, once in that time if he should be going that way on any other business. These five, A, B, C, D, and E, I will designate "Brass Wire," who will try, if possible, to get elected as members of the board of management, or as directors, as the case may be, so that they may have it in their power to appoint, or recommend to be appointed, a man to act as manager (Capt. F.), no matter whether he knows anything of mining or not, so long as he answers the purposes of "Brass Wire." He must be advised on every point by "Brass Wire," who will cause him to recommend and otherwise use means to get engines and other machinery erected, which will, as a matter of course, come from Mr. A.'s foundry. When the machinery is in course of erection there is timber and other things required from B, D, and E; at the same time, C. is looking anxiously on for them to say that oil is wanted. The profits arising from the supply of engines, timber, coal, grease, nails, oil, &c., will pay more than double the amount of "Brass Wire's" calls. "Brass Wire" now have the advantage of knowing, from their own reports, and would have other shareholders believe) very clever manager, Capt. F., of any important discovery or other change before any of the other shareholders, so that they can instruct their brokers accordingly, and make their market before others know anything of it. Capt. F. will, I have no doubt, get a good percentage on the orders for, &c., in addition to his salary, which makes him about engines and machinery to the top of his voice. When Mr. G. or H., the representative of the gentlemen in Glasgow, London, or elsewhere, come down, "Brass Wire" or Capt. F. are the first to meet with him, and he, supposing they know all about the mine and its requirements, listens very innocently to what they tell him concerning it. Mr. G. is also advised by "Brass Wire" how to use his vote and proxies at the meeting, which, as a natural consequence, is to vote for their propositions, and the work is done. Mr. G. goes back with a fine report pitched into him by "Brass Wire"; the mine was never looking more cheerful than at present, but there are another 2s., 3s., or 5s. per share call made; going to erect crusher or some new machinery immediately. In some cases, where mines have made some returns, but not enough to pay before the company is wound-up, it is owing to unqualified managers alone; such managers, perhaps, are able to write so as to make gentlemen believe they were brought up to mining, but instead of that they have spent the greatest portion of the time as gentlemen's domestic servants, or as clerks, &c.

Capt. N. Ennor speaks of those at the Royal School of Mines, Ferny-street, as being merely theorists, which is bad enough, but those named above are neither theorists nor practicals. What then is the result? Why, an advertisement in the *Journal* to the following effect:—"In the Court of the Vice-Warden of the Stannaries—Stannaries of Cornwall.—In the Matter of the Companies Act, 1862, and of G. Mining Company.—To be Sold, by Auction, &c. or 'Notice—Mine, Engine, Boiler, and other Valuable Plant for Sale.—To be Sold, at H— Mine, by Public Auction, &c. A law merchant, and auctioneer will make what I have said clear to the most obtuse and conceited person; although it is an allegorical statement it is, nevertheless, founded on facts; may I, therefore, prove a warning to those for whom it is intended—those who have a large interest at stake, and are not sufficiently qualified, or have not the time to attend, to judge for themselves.

As a remedy for all these proceedings, which are injurious to legitimate mining and honest men, I would advise gentlemen who have a large interest in several mines to appoint a man of unblemished character, unbiased principles, and intelligence, who would brought up to mining, so that he may have a practical knowledge of every branch of the duty should be to be continually going from one mine to the next, and to ascertain the prices of machinery, materials, &c., that might be wanted for the mine, so as to get them at the cheapest rate, and communicate to his employers alone every transaction, and as well as changes in the lode or lodes, that might cause the rise or fall of shares in the market, or is worthy of notice, that they may have an equal chance with "Brass Wire." This man should have nothing to do with the working of the mine, unless so advised; neither should he be under the control of any new hirelings, so that he might be able to act independent without being in fear. I have no doubt but that if gentlemen were to adopt this plan, and the man they appointed honest in his dealings, they would get more satisfaction for their money, which would be spent in the development of the mineral resources of their mines, so as to have something to erect machinery for if possible, instead of spending nearly all the company's money in the erection of unnecessary machinery, &c., and then have none left for the purpose of making discoveries, the result of which is the above advertisement. Merely sending a captain to inspect for once or twice will not have the desired effect. The mine captains have been sent by gentlemen to inspect certain mines; they go the office or account-house, have a few glasses of "toddy" with the manager or resident captain, ask him a few questions, and report from the answers received, without going underground at all—that is, in some cases, and in other cases ten chances to one if the manager so sent has some way some connection with "Brass Wire." I have travelled a little, and always been engaged in mining from a boy, and having been in the habit of taking notice of how things are managed, may say that I think the above statements, in regard to mismanagement, are not inapplicable to many other mining districts besides this one. I shall say no more at present on the subject, because I "Brass Wire," or any of their captains, were to know who wrote this I should not be left to work here or anywhere else. I shall conclude, therefore, by subscribing myself, I remain, Sir, your obedient servant, Gunnistake, March 8.

T. L. T. L. T. L.

EMERY.—Dr. Charles T. Jackson, the State Geologist of Massachusetts, has reported the discovery of what he terms an inexhaustible bed of the best emery in the world at Chester, Hampden county, in the middle of Massachusetts, and refers to the English saying, "A good mine of emery is worth more to a manufacturing people than many mines of gold." He states that he discovered the emery while examining a hard rock excavated by the miners, who supposed it to be iron ore. He saw that it would scratch quartz and topaz readily, and that it possessed all the properties of emery. Chemical analysis gave—aluminum, 45.60; protoxide of iron, 45; silica and titanate acid, 11.60. Regarding the oxide of iron which he described on his needs as accidental, and that which cannot be so removed as an essential constituent, Dr. Jackson thinks that must be ranked as a distinct species, and not as a mere granular form of corundum or sapphirine.

THAMES TUNNEL COMPANY.—Receipts for the week ending March 11, 79l. 19s. 1d.; number of passengers, 19,189.











### Mining Correspondence.

are valued in the aggregate at \$250l. to 300l. per fathom, the course of ore in the 4 (new shaft) being alone valued at 80l. to 100l. per fathom. It appears, therefore, that the expense of sinking the shafts, agitating the management as to the question of a call and encouraging speculative sales of the shares, have been the chief causes of their enormous decrease in value, and not the want of ore. It has been stated that all the ground be-

**MINE ACCIDENTS.**—At Dolcoath Mine, on Saturday, Philip Daw was killed and Jeremiah Donald seriously injured by a fall of ground at the 266 fm. level. Verdict, "Accidental Death." At the same mine, on Monday, Robert Vial, 60, was seriously injured that he has since died, by falling only 11 feet.

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chased are on the way for Llanidloes Railway Station, and will be delivered on the mine as soon as they arrive. We shall also get the best cut to bring the water to the wheel, and make as good progress as ever we can in all things with the number of loads we have in employ. I wish to employ a few more hands in the sinking of the shaft, so as to push it down with greater speed, after which I feel fully convinced you will cut into a productive lode for lead of a rich quality. There is a sufficient quantity of stones already raised from the sinking of the shaft for the building of the wheel-pit, and the masons will be set to work as soon as the ground for the wheel-pit is taken out.

**DALE.**—R. Nines, March 15: The Pipe vein is very much disordered, and is split into several branches, and is not yielding so well of lead. We have to-day sampled 25 tons 2 cwt. of lead and a parcel of blende, computed 50 tons.

**DEVON AND COHNWALL UNITED.**—T. Neill, March 14: George and Charlotte: The lode in the 24 west is looking promising, producing stones of ore; no change east at this level. The lode in the 12 east is looking more promising than for some time past. The two stops in the back of this level are worth 5 tons each per fm. One stop in the back of the deep-adit is worth 3 tons per fm. No change in the deep adit east.—William and Mary: The lode in the 24 east is promising, and ground favourable for driving. No change in the cross-cut north. In the 22 east the south part of the lode is worth 12 tons of ore per fathom. We have left the north part for a time, it being too large to carry. We have two stops working in the back of this level, worth 5 and 10 tons of ore per fm. There are two stops in the back of the 10 west 5 tons each. No change in the lode at the wheel-shaft since last report.

**EAST BROOKWOOD.**—T. Bennett, March 14: The cross-cut is driven north from the shaft 5 fms. 1 ft.; the ground at present is spare for driving, notwithstanding we hope to reach the lode by the time anticipated—at the close of the present month. We are sinking a small shaft on No. 2, or north lode, which presents good indications for bearing mineral. I unhesitatingly declare this to be a lode of unusual promise; we expect to reach it in the course of a few days. The machinery is working well.

**EAST CARADON.**—Jas. Seccombe, March 15: Caunter Lode: The 70 east is poor; the 50 east is worth 12½; and the 80 west, 25½ per fm.—New Lode: The 60 west produces saving work.

**EAST CARN BREA.**—Thomas Glanville, James Scholmer, March 15: No. 3 Lode: In the 70 east the lode is producing 4 tons of copper ore per fm. In the 70 west the lode is producing 2 tons of ore per fm. In the 60 west the lode is producing 2 tons of ore per fathom. In the 60 east the lode is producing 2 tons of ore per fm. In the 40 east the lode is producing 3 tons of ore per fm.

— March 11: Tutwork Setting: Thomas's shaft to sink below the 60, on No. 3 lode, by nine men, at 12½ per fm. Thomas's shaft to sink perpendicularly below the 26, to intersect the south lode, by nine men, at 15½ per fm. The 70 to drive east, on No. 3 lode, by six men, at 3½ per fm. The 70 to drive west, on No. 3 lode, by six men, at 4½ per fm. The 60 to drive east, on No. 3 lode, by six men, at 4½ per fm. The 60 to drive west, on No. 3 lode, by six men, at 4½ per fm. The 50 to drive east, on the new lode, by four men, at 4½ per fm. The 50 to drive west, on No. 4 lode, by four men, at 5½ per fm. The 50 to drive east, on No. 6 lode by four men, at 6½ per fm. The rise in back of the 50, on No. 6 lode, by four men, at 2½ per fm. The 40 to drive west, on the new lode, by four men, at 4½ per fm. The 40 to drive east, on No. 6 lode, by four men, at 12½ per fathom. The 60 to drive east, on No. 3 lode, by four men, at 6½ per fm. The 60 to drive west, on No. 3 lode, by four men, at 6½ per fm. The 60 to drive east, on No. 3 lode, by four men, at 6½ per fm. The 60 to drive west, on No. 3 lode, by four men, at 6½ per fm.

**EAST GREAT WORK.**—J. Lean, March 15: The sinking of the engine-shaft is progressing satisfactorily, now sunk 2 fms. 3 ft. below the 30. The 10 west is without material alteration.

**EAST GUNNISLAKE.**—Jas. Phillips, March 16: We are driving by the side of the lode in the 36 east of Gard's shaft. The lode in the deep adit is still disordered by small cross-courses.

**EAST JANE.**—T. Hodge, March 16: The engine-shaft is below the 36 fathom level 4 fms. 4 ft., the ground in which is of a favourable character. The lode in the 36 fm. level south end, on the eastern part, is not looking quite so well for lead, but I regard this change as only temporary. We have a pair of men just behind this end, cross-cutting to the western part, as far as seen, 3½ ft. It is showing good indications of ore, the thing good being near at hand. In the 36 fm. level south end, on the western part, the lode is large, and letting out much water; we have suspended this end and put the men to drive east, to prove the eastern part, which has not been seen for the last 10 fathoms driving. The winze is below the 26 fm. south level 2 fms.; no lode has yet been taken down. The lode in the 26 fathom level north end is large, occasionally producing good stones of lead. The lode in the adit level north end is 15 inches wide, yielding good stones of lead. There is no change elsewhere.

**EAST ROSEWARNE.**—J. James, March 16: There is no change to notice at the 85 east or west since last reported. In the 75 east the lode is 9 in. wide, worth 8½ per fm. In the 75 west the lode is small and poor. In King's shaft the lode is 15 in. wide, worth 20½ per fm. In the 65, west of King's, the lode is 18 in. wide, worth 20½ per fm. The stopes throughout the mine are much as last reported.

**EAST ST. JUST UNITED.**—J. Cartlew, P. Casley, March 15: We have several men employed on work necessary preparatory to commencing active operations; such as the removal of the old engine-house, and raising additional stone for the building of a new one; also for a smith's shop, the former one being very small and inconvenient; the masons are engaged on this work. We have timber and shafmen at Ageworth, Cranleigh and Higher Bosarne shafts, putting them in order, preparing skip-roads, ladders, &c.

**EAST TREKREBER.**—John Nancarrow, March 14: The stopes in the 12 east are worth 4½ per fathom. East stop, near the end is worth 3½ per fm. Stope below the level worth 6½ per fm. Lode below the 12 west worth 12½ per fathom. The ground in the 30 cross-cut north is rather improved for driving; ground still wet. The 30 east yields good work for tin and copper, worth about 4½ per fathom. From the character of the ground above we think this end must improve shortly. The stopes in the back of the 30 is worth 6½ per fathom.

**EAST WHEEL GRENVILLE.**—G. R. Odgers, W. Bennett, March 15: The lode in the 75 east is from 1 ft. to 15 in. wide, producing a little tin. The lode in the 75 west is from 2½ to 3½ ft. wide, producing a little tin. The lode in the 65 east is worth 1 ton of ore per fathom. The lode in the stopes below the 65 west is worth 4 to 5 tons of ore per fathom, with good work for tin. There are two stops above the 65 west—one worth 15½, and the other 2 tons of good ore per fm. The lode in the winze or shaft, sinking below the 55, is small, but producing a little tin. The lode in the stopes above the 55 west is worth 12½ per fm.

**EAST WHEEL LOVELL.**—J. Burgan, March 16: The south lode in the shaft, sinking below the 28, has no improvement since my last report. The lode in the new engine-shaft, sinking below the 40, continues to give good work for tin, worth 10½ per fm. to 90½ per fm. The 40 cross-cut is going forward quite as fast as anticipated. The 26, east of Burgan's, has fallen off in value this week. The bobs and bob-pits are in hand for the turnpike shaft lode, and having had some fine days we have made good progress with the work.

**EAST WHEEL RUSSELL.**—J. Goldsworthy, March 11: In the 130 east we have opened into the lode a little east of the slide or flookan; so far as the lode could be seen, for about 3 ft., it has been worth 15½ per fm.; by its present appearance we hope to see a good lode in a few days. The water continues to flow so strong from the lode that we cannot make the progress we wish.

— J. Goldsworthy, March 11: Telegram: In the 130 east the lode is opened into a short distance; so far as seen it is worth 15½ per fm.

— J. Goldsworthy, March 14: Owing to the clack of the drawing-lift in Hitchin's engine-shaft falling under water on Saturday evening, the water has been in the 130, at Homersham's shaft, yesterday and to-day; however, everything is now working well. We hope to have the water in fork by to-morrow morning, and everything in full working order.

John Goldsworthy, March 15: In the 130, east of Homersham's shaft, at Soper's cross-cut, driving north, the north lode has been cut into about 10 feet, composed of capel, gossan, quartz, prlan, and mundle, and producing stones of grey sulphur of iron per ore—a fine healthy-looking lode. Owing to the clack having failed under water, in Hitchin's engine-shaft, on Saturday evening, the water being in, there has been but little done this week; however, the water is again in fork, and everything in its usual working order. In the 130, driving west of Soper's cross-cut, the lode is 3½ feet wide, composed of capel, quartz, prlan, and mundle, and produces a little copper ore—saving work. In the 130, east of Soper's cross-cut, the lode, so far as seen east of the slide or flookan, is worth 15½ per fathom. By present appearance we hope to see a rich lode in a few days. Owing to the great influx of water flowing from the lode the progress has been slow; however, the water is now better, and the progress at the station by the side of the lode appears to be coming a little stiffer, and less troublesome for timber. In the 77, east of Homersham's shaft, driving west of Northey's cross-cut, the lode is 2½ feet wide, composed of capel, quartz, and prlan, and producing rich stones of copper ore. In the 48, driving east, the lode is 3½ feet wide, composed of capel, quartz, mundle, prlan, peach, and a little black oxide of copper ore. In the cross-cut driving north in the 88, west of Hitchin's engine-shaft, the ground is favourable, and good progress is being made. The branches in the country contain mundle and a little black oxide of copper ore.

**EAST WHEEL YOR.**—J. Pollard, March 15: The shafmen are getting on as fast as possible with the work, and the water is better. We have been obliged to timber the hanging-wall; it has delayed us a little, but I hope to have all the work completed and the shaft in full force of sinking in about a week from this time.—Smith's Lode: In the 60 east the lode is full 3 ft. wide, composed of mundle, peach, prlan, blende, and quartz, with a little tin, and letting out large streams of water—a kindly lode.

**FRANK MILLS.**—J. P. Nicholls, J. Cornish, R. Andrew, March 15: We set our engine-shaft to sink below the 115 on Saturday last. The west lode, in the 115 north, is without any change since our last. In the 115 north, on the east lode, the ground has become better for progress, and we, therefore, expect an early improvement in the value of the lode, which we now think will be better progress as the stratum by the side of the lode appears to be coming a little stiffer, and less troublesome for timber. In the 77, east of Homersham's shaft, driving west of Northey's cross-cut, the lode is 2½ feet wide, composed of capel, quartz, and prlan, and producing rich stones of copper ore. In the 48, driving east, the lode is 3½ feet wide, composed of capel, quartz, mundle, prlan, peach, and a little black oxide of copper ore. In the cross-cut driving north in the 88, west of Hitchin's engine-shaft, the ground is favourable, and good progress is being made. The branches in the country contain mundle and a little black oxide of copper ore.

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Mountain boundary, beneath the 9th milestone, on a very steep wooded and rocky declivity of the mountain, and the miners have since found fine lumps of ore in different places along the line of the back of the lode. It runs towards the Abernethy and Mr. Trevellick's sett. The large rock of ore found in his land came from the same vein, and it will make a new mine for you. The ore in the adit is rather better; the ground and ore is getting harder and it looks as if it will make a large and very productive addition to the mine. We are enabled to begin dressing again after the severe weather.

**GOLCH HILL.**—March 16: The 60 east, driving north from Pulley shaft, is still being driven with the old workings; there is a small branch in the bottom looking very healthy, and producing a little lead, but not enough to value. The surface water still troubles us in the shaft, but we hope to get rid of it in another week.

**GREAT BRIGGAN.**—J. Trevellick, March 15: The lode in the winze sinking below the deep adit, east of cross-cut, is worth for copper ore 6½ per fm. In the winze sinking below the said level further east the lode is worth 8½ per fathom. The lode in the end, driving east of cross-cut, at the deep adit level, produces 1 ton of ore per fm. At the western part of the mine the shafmen are engaged in cutting flat at the 42, putting in penthouses, and making every preparation for sinking below. The stopes at the 42, west of the western shaft, on an average are worth for copper ore 15½ per fm.

**GREAT CARADON.**—F. C. Harper, March 11: We are progressing with our operations here as fast as we possibly can. The ground in the 60 fm. level cross-cut, driving north of engine-shaft, is just now rather more favourable for exploring than it was when I last reported, being traversed by numerous small branches, consisting of peach, mundle, quartz, with occasional spots of copper ore. The ground in the south cross-cut, same level, is without any particular change, letting out much water, indicating that we are approaching another lode. In the level driving west of this end, the lode is about 1 ft. 6 in. wide, composed of quartz, mundle, peach, and good stones of copper ore, moderately easy for progress.

**GREAT DEVON AND REDFORD (Colcharton).**—J. Richards, March 15: We have this day commenced to drive north at the 60; the ground is mixed up very much with floors of spar, which renders it hard for progress. The lode at the 40, driving east, is still very small, and I do not expect much change in this direction until the cross-course is intersected. The lode at the same level, driving west, is composed of capels, spar, and spotted with yellow copper ore. The men are engaged in taking down the lode at the 30; the same is full 4 ft. wide, and is composed of capels, mundle, prlan, peach, and copper ore, and will at present yield 1 ton of the latter per fm., and is altogether a very promising looking lode.

**GREAT NORTH DOWNS.**—J. W. Craze, M. Jenkin, March 15: The lode in Vian's engine-shaft, sinking below the 67, still produces stones of copper ore, and the ground a little easier for sinking; the present price for sinking the same is 40½ per fm., by nine men. The lode in the 67, driving west of engine-shaft, is improved, the part being carried, 4 ft. wide, is worth 6½ per fm. The lode in the 57, driving west of engine-shaft, is yielding stones of copper ore, but not sufficient to value. The lode in the 57, driving east of Jenkin's shaft, is 2 ft. wide, worth 8½ per fm. Pendarve's lode, in the 57, driving east of cross-cut, is 1 ft. 6 in. wide, composed of soft quartz, with a little copper ore, and looks kindly for an early improvement. The water in the eastern part of the mine is going down very slowly; should the present dry weather continue it will be much in our favour.

**GREAT RETALLACK.**—W. H. Reynolds, March 15: The ground in the adit end is rather stiffer than for some time past, and the progress making is not so great.

**GREAT SOUTH CHIVERTON.**—J. Nancarrow, March 13: We have a large flookan lode in the west end, with plenty of water; this is pushed on as fast as possible. The lode in the east end is 2½ ft. wide, and looks very promising. In driving south towards the south part, in which the spots of lead are seen near the surface, we have cut a very fine-looking lode, 3 to 4 ft. wide, and have just cut through it, which is composed of iron, mundle, quartz, &c., with lead and blende throughout, of a similar character to that in the rich lodes in the neighbourhood; nothing can be more promising for turning out well on being opened up. There is a box of the lead, iron, blende, &c., showing the rich character, sent on to the office. There is a most important discovery to be met with at the depth of only 10 fms.

**GREAT SOUTH TOLGUS.**—J. Daw, March 15: Friday last was setting-day. In the 154, east of Lyle's shaft, the lode is 3 ft. wide, producing 4 tons of copper ore per fm.; set to four men, at 7½ per fm.; about 8 fms. behind the end of the lode is worth 4 tons of copper ore per fm.; set to four men, at 7½ per fm. In the winze sinking below the 154 fm. level, 8 fms. east of Lyle's shaft, the lode is 1 ft. wide, unproductive; set to six men, at 10½ per fm. In the 154, west of Lyle's shaft, the lode is 3 ft. wide, producing a little tin; set to four men, at 5½ per fm. In the 140, west of Lyle's, the lode is 4 ft. wide, worth 7½ per fm. for tin; set to four men, at 5½ per fm. In the 140, east of new shaft, the lode is 1 ft. wide, unproductive; set to four men, at 3½ per fm. In the 125, east of new shaft, the lode is still disordered by the cross-course; set to three men and three boys, at 8½ per fm. In the rise in back of the 100, east of Noel's shaft, the lode is 1 ft. wide, producing good stones of copper ore; set to four men, at 4½ per fm.

**GREAT WHEEL BUSY.**—J. Edwards, J. Trevellick, C. Bawden, March 11: The 150 fm. level cross-cut, driving south of Harvey's engine-shaft, is still in the elvan course. We have cut into the lode in No. 2 cross-cut, at the 140, east of Harvey's engine-shaft, 3½ ft.; it is producing a little copper and tin, but not sufficient to value; it has a very kindly appearance, and letting out a quantity of water. We are daily expecting to communicate the 140, east of Harvey's engine-shaft, with the 140, west of Offord's; the lode at these points is worth about 10½ per fm. Offord's shafmen will complete cutting flat at the 140 in the coming week, after which we shall resume sinking the said shaft below that level. In the 140, east of Offord's shaft, the lode is 3 ft. wide, worth 10½ per fm. for copper and tin. The lode in the back of the 140, east of engine-shaft, is worth for tin and copper 20½ per fm. Nos. 1 and 2 stops, in bottom of the 130, east of Offord's shaft, are worth respectively 25½ and 12½ per fm. The lode in the 130, east of said shaft, is producing stamping work for tin. The same remark applies to the 110, east of Mathew's shaft. The lode in the 100, driving east of said shaft, is 4 ft. wide, worth for tin 25½ per fm. The lode in the rise in back of this level is 4½ ft. wide, worth for tin 30½ per fm. The lode in the winze sinking below the 90, east of Mathew's shaft, is 3 ft. wide, worth for tin 12½ per fm. The lode in the 90, east of said shaft, is 5 ft. wide, worth for tin 12½ per fm. The lode in the 80, driving east from Mathew's shaft, is 1 ft. wide, producing tin for 8½ per fm. The 24, west of Walker's shaft, sinking below the 70, is worth for copper and tin 12½ per fm. The lode in the rise in back of this level, against Walker's shaft, is worth for copper and tin 12½ per fm. The stopes in the back of the 70, west of Walker's shaft, is worth 10½ per fm. for tin and copper. The lode in the 50, driving east of Mathew's shaft, is 2 ft. wide, worth for tin 8½ per fm. The lode in Walker's shaft, sinking below the 36, is 4 ft. wide, producing a little tin. The ground in the 36 fm. level cross-cut, south from Walker's shaft, is favourable for driving.

**GREAT WHEEL METAL.**—Wm. Chappell, March 16: In No. 1 shaft, on new lode, we have sunk 3 ft. below the level of the lode, and the lode is 3 ft. wide, character, and former value, worth 10½ per fm., which is now only 6 fms. below surface. We are making good progress in fixing the 6-in. lift in No. 3 shaft, and erecting the horse-whim and horse-engine for draining the water, which we hope to get to work in the course of next week.

**GRYLLS WHEEL FLORENCE.**—Edward Rogers, Edmund Rogers, March 14: At the 12, driving east, the lode is 6 ft. wide, worth 8½ per fm.; at this level, driving west, the lode has a little improved, now worth 6½ per fm.

**GUNNISLAKE (CLITTERS).**—W. Skewis, J. Rodda, March 15: The 40-inch cylinder engine and boiler, which were fixed, and ready to work, 9 in. plunger lift and complete to the 36 by the side of the lode, and skip-road made complete for working two skips to the 24 fm. level, and stuff is now being drawn from this and the 36 fm. level; every effort is being made to complete the fixing of the pitwork, skip-road, &c., to the deep adit level at the earliest possible moment. The lode in the deep adit east is considerably improved, and will now yield 1 ton of good copper ore per fm., and also good saving work for tin, with prospects of still further improvement. The 24, east of engine-shaft, is extended about 10 fms. We have again resumed the driving of this level, the lode not being cut through to the east of the cross-course; we are unable to give its size or value, but hope to do so in next report. The stopes in the back of this level are worth for tin and copper 9½ per fm. The 24, west of the south part of the lode, is producing saving work, and presents prospects of further improvement. The cross-cut north in this level has passed through a portion of the lode, which has produced good saving work for tin and copper, but being of an opinion that the main part of the lode is not yet reached, this cross-cut is still being continued. There are two stops working in the back of this level, worth on an average 6½ per fathom. There are four stops working in the back of the 12 fm. level, varying in value from 4½ to 10½ per fathom. The lode in the 36 east is worth 8½ per fathom for tin and copper. The stopes in the back of this level is worth for tin and copper 18½ per fathom.—Tin Lode: In the adit level east the lode is 6½ ft. wide, producing tin for 8½ per fm. The lode in the back of this level is also worth 6½ per fathom. The surface work is progressing satisfactorily.

**HALLENBEAGLE.**—E. Richards, R. M. Kito, March 11: At Pinner's engine-shaft, sinking below the 44, the ground is rather hard. The lode in the sump-winze, sinking below the 44, on the north lode, is 3½ ft. wide, worth 21½ per fm. The water is draining more freely since we have cut through a floor in the sump-winze, where the lode is of a looser character.

**HAVAN.**—G. Jones, March 14: Carriston's shaft has been sunk down to the 20, and the shafmen are now engaged in cutting out ground for the pit, &c.; water has been coming out of the shaft, and the ground is getting better; the lode has a very kindly appearance, and is producing about 1½ ton of lead ore per fm. The lode in No. 1 winze has fallen off, producing about 5 cwt. of lead ore per fm., but I think from indications that it will shortly improve again. No. 1 stop in back of the 10, east of said shaft, has been stopped up to the adit level, and is suspended, the men at present being engaged stripping down the lode on the south side of Seton's adit. No. 2 stop, in back of the 10 east, yields about 1½ ton per fm.; so does No. 3 stop. No. 1 stop, in back of the 10 west, is producing about 1 ton per fm. The ground in the deep adit is a little more favourable for progress of late, and looks promising for the production of mtle, but so far unproductive. The lode in the sump-winze, where the water is being cut through, and clearing of Sheldon's shaft, but I imagine we are not far from its bottom. We expect to have 50 tons of silver-lead ore ready for sale by the end of this month, should the weather permit. Ore previously in store 20 tons; in bin on the mine 15 cwt.; in course of dressing about 18 tons.

**HAWKMOOR.**—J. Richards, March 14: The stopes in the back of the 25 east are worth 14½ ton of copper ore per fm. The cross-cuts north and south at West Hawkmoor are driving in favourable ground for progress. The stopes in back of adit level, on No. 3 lode, are turning out some good work for tin ore.

**HINGTON TOWN CONSOLS.**—T. Richards, March 15: Bailey's engine-shaft, sinking below the 130, is worth 60½ per fm. for length, 13 ft. The 120, east of Bailey's engine-shaft, is worth 20½ per fm. The 130, west of Bailey's, is worth 25½ per fathom. The 110 west is worth 15½ per fm. The 85 west is worth 20½ per fm.

**KELLY BRAY.**—G. Rowe, April 15: We have intersected a small cross-course in the 70 east, which has improved the appearance of the lode both in size and character. The ground in the 60 cross-cut north still continues stiff and slow of progress. The ground in the new shaft, and also in the rise, is moderately favourable, both exceedingly wet, which makes the progress rather slow; in the meantime every possible effort is being made to effect communication.

**LADY BERTHA.**—Capt. Harper and Metherell, March 16: Since our last report nothing of importance has transpired in any part of the mine. The lode in the new eastern shaft, sinking below the 41 east, is about 3 feet wide, composed of peach, quartz, mundle, and ore, saving work. In the winze sinking below the 41 west the lode is between 2 and 3 feet wide, composed of mundle, quartz, peach, and ore; worth of the latter 2 tons, or 6½ per fm. The ground in the cross-cut driving south to the east of the great cross-course continues moderately favourable, consisting of light killas, prlan, with occasional strings of mundle, and spots of lead ore. The tribute department continues to yield about the same as some time past.

**MAUDLIN.**—John Trevellick, March 11: Old Mine: The stopes are sinking the engine-shaft as fast as possible, but the ground is rather harder for sinking than it has been. In the 70 east end we have cut the cross-course, which is letting out a quantity of water, and we expect have the lode south, but we are not yet through it. The lode in the back of this level is worth 60½ per fm. In the 70 west the lode has not yet been reached in the cross-cut; the ground is rather hard for driving. This cross-cut has been started to reach the main part of the lode not seen west of engine-shaft; until this cross-cut has been driven the rise has been suspended.—West Mine: The ground is easier for sinking, and good progress is being made.

**MERLYN.**—Wm. Sandoe, March 15: The stopes in the back of the 20 continues to produce a good mixture of lead ore, worth from 12 to 15 cwt. per fm., and looks most promising.



in the 12 east, east new shaft, still retains its size, and is of the same promising description, about 4 ft. wide, producing savings work for copper ore. The men have not yet commenced in the 12 west, in consequence of not having been able to get away the stuff; they are now employed taking out ground for dressing-floors.

**WEST CARADON.**—W. Johns, March 13: Since our last report sent you we have reached Clymo's lode, in the 128 fm. level, south of Foxe's shaft, which is about 3 ft. wide, spotted with copper ore—a kindly lode; this lode has never been proved from off the influence of the cross-course, and as we are so pressed for the want of air (being full 90 fms. off from shaft) our object is to continue to clear the cross-cut until Jope's lode is met, where, from which we shall then be in a position to drive on both lodes together, believing this the best course that can be adopted. In the 12 west on Vivian's south lode, we have recently intersected a small cross-cut, which has very much improved the lode. In the 70 cross-cut north, on the Menadue lode, we are meeting with small branches containing good stones of ore; this shows good indications, as we are approaching the main part of the lode. All other bargains without alteration. We shall sample to-day a little over 200 tons of copper ore.

**WEST GREAT WORK.**—S. J. Reed, March 14: The summer at Paul's engine-shaft are now engaged fixing a new plunger-lift at the 28. We have intersected the great cross-course at this level, on which we are now making good progress in the 150. Since the 150 level, we have been unable to equalize the air that answers well. There is nothing to report respecting the other points of operation, the men having been engaged at capstan and winch, about the alteration of the pitwork, &c.

**WEST WHEAL YOR.**—J. Southey, March 16: Good progress is being made in sinking Gundry's engine-shaft below the 20, preparatory for cutting elater-plat, sink-lift, &c. The 20 is driven east of the cross-cut 3½ fathoms; the lode is about 2½ feet wide, but still in the unsettled ground occasioned by the dookan. The same level is driven west of the cross-cut 6 feet; the lode is 3 ft. wide, composed of quartz, mundio, and a little tin, of a very promising appearance. The engine and pitwork are working satisfactorily.

**WHEAL AGAR.**—Wm. Roberts, March 14: The lode in the 100, east of Windsof shaft, is 3 ft. wide, composed of spar, dookan, and stones of ore. In the 90, east of Windsof, the lode is 2½ ft. wide, producing stones of ore. The lode in the 90, west of Windsof, is 3 ft. wide, unproductive. The lode in the 60 east of cross-cut, is 1 ft. wide, producing stones of ore. In the 90, east of western shaft, the lode is 1½ ft. wide, composed of mundio, dookan, and a little tin.—Dobree's lode: In the 90, east of cross-cut, the lode is at present small. The lode in the whim-shaft, sinking below the 110, is 2 ft. wide, composed of spar, dookan, and a little tin—a promising lode; the ground continues to be of a quality sinking. The lode in the 80, east of whim-shaft, is 2½ ft. wide, producing lode for quality tin. No lode or branch has been intersected in any of the cross-cuts lately.

**WHEAL CREBOR.**—J. Gifford, March 14: Our progress in driving by the side of the lode in the 108, both east and west, is rather slow, owing to the ground being more close than in any of the upper levels. In the winze in bottom of the 98 west the lode is 7 ft wide, 3 ft. of the south part yielding 5 tons of copper ore, worth 25s. per fathom. The stop in back of the 98 west is yielding 2½ tons of copper ore, worth 12s. 10s. per fm. In the cross-cut south in the 96 the lode is still favourable for driving. In the 96 east the lode is 3 ft. wide, 2 feet of the south part is yielding savings work for driving. The stop in bottom of the 84 east, east and west of Hooking winze, is yielding 1½ tons of copper ore per fm., worth 10s. In the 84 east the lode is 3 ft. wide, yielding 1½ tons of copper ore, worth 6s. per ton. In the winze in bottom of the 72 east the ground is more close for sinking than was expected. In the 48 east the ground is still good for driving. Our tribute department is much the same as last reported, and the men are getting wages.

**WHEAL CROFTY.**—H. Skewis, March 14: The lode in the 24, west of Square's shaft, on the south lode, is 2½ ft. wide, producing good stones of copper ore, but not enough to value. The lode in the 45, west of the cross-cut, and 20 fms. south of Square's shaft, is 2½ ft. wide, producing good stones of copper ore, but we cannot report its value and quantity, as it is too small to work. The lode in the 40, east of Square's shaft, is drawing the ore of tin, and take a sample of it; the lode is presenting a very strong and promising appearance.

**WHEAL CURTIS.**—H. Skewis, March 15: The engine-shaft is down 9 fms. below the 40 fm. level; the ground is still hard for sinking. The lode in the 40 east is 2 feet wide, producing good stones of copper ore, but not to value. The lode in the 40 west is split, and at present poor. The lode in the 30 west is 3¼ ft. wide, producing good stones of copper ore, with a very promising appearance. The ground about the old engine-shaft is nearly all taken away from the 30 to the 40 fm. level. We shall now commence driving the lode in the 20, east of the 40 fm. level. The lode in the 20, east level east and west to the junction of the east lode, and 100 west now standing to the south of us.—Dumpling lode: Square's shaftmen have been cutting plat in the 30 fm. level, and fixing the skip-road, &c., during the last fortnight, therefore we have not been able to do much in these levels since last reported, but we hope this plat will be completed next week, when we shall commence sinking the shaft below this level. The lode in the 20 east is 1 ft. wide, and at present poor. The lode in the 20 west is 2 ft. wide, producing good stones of copper ore, with a promising appearance. The tribute pitches are much the same as last reported, and the men are getting wages.

**WHEAL EDWARD.**—Geo. Rowe, March 11: The lode in the 61, west from engine-shaft, is 2 ft. wide, thickly impregnated with good quality yellow copper ore, saving work, and showing a very kindly appearance. The stoping in bottom of the 61 east is progressing as fast as the nature of the work will admit, 10 fms. being made complete during the past month.

**WHEAL GRENVILLE.**—W. R. Odgers, Wm. Bennets, March 11: The 120 west is without change to notice. In the 110 east we have discovered some more lode standing in the north side, which is yielding good stones of tin, but the ground being stiff we have not been able to do more at present. The lode in the 110 east is large, and yielding excellent work for tin, worth 25s. per fm. Two stops above this level, yielding 10s. and 15s. per fathom. The lode in the rise above the 100 east is producing good work for tin, worth 12s. and 14s. per fm. The lode in the stop above this level is worth 8s. per fm. The lode in the winze sinking below the 100 west is from 3 to 3½ ft. wide, and worth 10s. to 12s. per fm. A stop above this level is worth 10s. per fm. The lode in the winze sinking below the 90 east is 4 ft. wide, worth 12s. per fm. The lode in the stop above this level is worth 10s. per fm. The lode in the 90 west is 20 in. wide, and looking more kindly than for some time past, producing a little tin.

**WHEAL GRAYLS.**—Edw. Rogers, Edw. Rogers, March 16: Fisher's lode: In the 65, driving west of shaft, the lode is 3 ft. wide, producing tin of a quality. In the 121 west the lode is small and poor. In the 30, east of Grylle whim-shaft, the lode has improved, now 3 ft. wide, worth 10s. per fm. In the 20 fm. level, driving east of Pressure shaft, there is no alteration; the lode is small and poor. In the winze in bottom of this level the lode is 2½ ft. wide, worth 6s. per fm. In the 10, west of Jones's shaft, the lode is 1 ft. wide, unproductive.—Standard lode: In the 12, driving east of Badger's shaft, the lode is 18 in. wide, producing a little tin, but not enough to value.—Georgia lode: In the cross-cut in the 30, driving west of Georgia's shaft, the lode is 1 ft. wide, worth 10s. per fm.

**WHEAL HARRIET.**—S. Williams, March 11: The lode in the 130 east and is producing stones of tin, but not to value. The lode in the 115 west end, from east cross-cut, is producing stones of copper ore. The lode in the stop above this level is worth 10s. per fathom. The lode in the 115 east end, from west cross-cut, is of a kindly appearance. The ground in the 90 cross-cut is not quite so favourable for driving, and letting out water. I think we are getting very near a lode or branch from these indications.

**WHEAL KITTY (St. Agnes).**—Wm. Polkinghorne, S. Davey, March 11: In the 82 driving west of Holgate's shaft, the lode is large, but small. Pryor's lode: In the 65, driving east of shaft, the lode is 3 ft. wide, worth 10s. per fm. In the 60, driving east of shaft, the lode is 3 ft. wide, worth 10s. per fm. In the 55, driving west of shaft, the lode is 4 ft. wide, and worth for tin 12s. per fm. In the 54, driving east of shaft, the lode is 2 ft. wide, and worth for tin 8s. per fathom. In the 44, driving west of shaft, the ground remains disordered, and the value of the lode unaltered from last week, worth for tin 8s. per fm. In the 44, driving east of shaft, the lode is worth for tin 6s. per fm. In the 34, driving east of shaft, the lode is 2 ft. wide, worth for tin 7s. per fm. In the add level, driving west of cross-cut, the lode is still valueless. We have no alteration to report in the other winzes or lodes.

**WHEAL KITTY (St. Agnes).**—S. Williams, March 16: Nich Russell lode: The lode in the 140 end, west of cross-cut, is worth 8s. per fm. The lode in the 130 end, west of rise, is worth 20s. per fm. The lode in the 130 end, east of rise, is worth 2s. 10s. per fm. The lode in the 120 end, west of rise, is worth 8s. per fm. The lode in the 120 end, east of rise, is worth 2s. per fm. The 90 cross-cut is driven south of the Gowen lode 31 fms.; at present driving at 6s. 10s. per fm.—Gowan lode: In the 90 end, east of Rogers's shaft, at present the lode is small. The lode in the winze sinking below the 80 is worth 2s. per fm. In the 70 end west the lode is small, not of any value. The stop above this level is worth 10s. per fm.

**WHEAL MARGERY.**—R. James, W. Rogers, March 16: Wellesley's shaftmen are engaged in cutting ground for bearers, cistern, &c., in the 122 fm. level. The 142, east of American, has been driven by the side of the lode during the week; the lode has not been taken down. In the 142 west the lode has a better appearance, but not producing enough ore to value. In the 132 east the lode is worth 5s. per fathom. Nos. 1 and 2 stops in the bottom are worth 6s. per fathom each. Nos. 1, 2, and 3 stops in the back are worth 6s. per fathom each. In the 132 west the lode is not producing sufficient ore to value, but it has quite drained the bottoms under the 122, which proves there is a connection between the two lodes, the lode in the 122 being held up by the 132, and the 132 to this level, only dipping west. The stop in the bottom of the 122 and the 132 before the 132 end, is worth 12s. per fathom. No. 1 stop, in the back of the 132 west, is worth 6s. per fathom. Nos. 1, 2, and 3 stops, in the back of the 132 west, are worth 5s. per fathom each. The winzes in the bottom of the 122 are worth 4s. per fathom each. In the 122 east the lode is worth 10s. per fathom. Nos. 1 and 2 stops, in the back of the 122 east, are worth 8s. per fathom each. In the 110 east the lode is poor. The stop in the back is worth 7s. per fathom. No other change.

**WHEAL MARY BUCHINGS (Rympton).**—W. Edwards: In the deep add cross-cut, the lode has been intersected, and is of a quality, grey, and black copper, giving a value of 16s.; the ground continues west favourable, and I judge we are very near the copper lode.

**WHEAL NORRIS.**—J. Andrews, March 11: At our setting-to-day the following bargains and pitches were let:—Carter's shaft to sink below the 45, by nine men, at 37s. per fathom. The 45 end to drive east of Carter's shaft, on No. 4 lode, by four men, at 3s. 10s. per fm. The 45 end to drive east of cross-cut, on No. 5 lode, by four men, at 4s. 10s. per fm. The 45 cross-cut to drive south of Carter's shaft, by six men, at 3s. 10s. per fathom. The 45 cross-cut to drive east of cross-cut, on No. 1 lode, by four men, at 11s. per fathom. No. 1 pitch in back of the 45, on No. 6 lode, by six men, at 8s. 6d. In No. 2 pitch in back of the same level, by six men, at 7s. in 11.

**WHEAL SITHNEY AND CARRMEAL.**—







profitably raise annually the 5000 or 6000 tons of zinc ore referred to by Mr. Monell. The report in last week's Journal of the proceedings of the meeting held in London of the Roaring Water Mining Company has attracted some attention here, but the prejudice so unfairly created by our scientific but non-practical men against the county of Cork as a mining district requires much and unmistakable success to eradicate the home antipathy.

The Rhos Hall Iron Company, with a capital of 170,000l., in shares of 20l. each, proposes to work the extensive ironworks and mineral property known as the Rhos Hall and Llwynion estates, near Ruabon and Wrexham, and extending over 266 acres. The grant is free of all rent and royalty whatever, for 89 years unexpired, and the company has the privilege of using adjoining surface land, upon payment of a rental of 2l. per acre. The purchase comprises the pits, furnaces, weighing-machine, manager's house and offices, and all the machinery and tools of every description, and, according to the provisional contract, the vendor takes one-half of his purchase-money in shares, not to receive dividends until 10 per cent. has been paid on the other capital, and the remainder by cash instalments, extending over a period of three years and a-half. There is an abundance of ironstone, fuel, and fire-clay, and the services of Mr. Henry Cresswell, of Handsworth, have been secured for the office of manager. The works can be put into active operation within a few months; the pig-iron and other mineral products command a ready sale, and a railway already runs within a few hundred yards of the furnaces, and in the course of a few months will run through the estate. Even adopting the present low prices in the iron trade, and allowing an ample margin for management, interest, &c., it is estimated that there would be left a highly remunerative return upon the capital employed. The prospectus will be found elsewhere.

The San Pedro del Monte Silver Mining Company, with a capital of 75,000l., in shares of 5l. each, has issued its prospectus, the object of the undertaking being to develop a rich mineral property near Ixtapan del Rio, in the province of Mexico. The lodes have been traced by Capt. Eastwick to be the continuation of those in the celebrated Tlalpujahua, from which 7,000,000l. worth of ore was raised in three years; and it appears that in the San Pedro del Monte property the five lodes form a junction, which at surface is from 35 to 40 varas wide. Capt. Eastwick writes that the mine is of extraordinary richness; he never saw a prettier lode than the Santa Rita (the San Pedro and Santa Rita are the two principal lodes, and, with the three others since discovered, run nearly parallel to each other until they form the junction), which he has traced south, and finds to present the same signs of richness wherever it shows itself—fine beautiful quartz and spots of metal: its breadth at surface, south of the adit, is from 2 to 2½ varas. The San Pedro lode is not less promising; he has examined the pits and shafts sunk all the way up the mountain on the back of the lode, which is 8 yards wide, with metal throughout. In 10 yards sinking of Arroyo shaft they broke 6 tons of metal, averaging 106 ozs. of silver per ton. The fifth lode discovered widens and improves as it goes down, and altogether he believes the mine to be one of the richest in Mexico. The transfer of the property, which is held in perpetuity, free of all royalties and charges, is to be made in exchange for paid-up shares only, although a very large amount has been expended in bringing the mines to their present condition; the sole reason for selling is want of capital to erect smelting and reduction works, and properly conduct the business; and Mr. Chynoweth, the present proprietor, who has had twenty years' mining experience in Mexico, has agreed to become the local superintendent. There is abundance of timber, labour is cheap and plentiful, and there is ample water-power both for drainage and supplying the reduction works. It is estimated that the capital will be returned in dividends within two years of the completion of the reduction works.

The Wallachian Petroleum Company publish a prospectus in another column of this day's Journal, for the issue of 4000, 7½ per cent. guaranteed preference shares, and have given notice that the list of applications will be closed on Wednesday and Thursday next for London and the country respectively. Upwards of 3000 tons of oil have been obtained from the company's wells, and the directors propose to erect a refinery establishment at or near Ibraia; they estimate that when it is completed a weekly net profit of about 4000l. can be realised on the present limited rate of yield from the company's wells; as these increase, it is confidently expected that 60 tons or more of oil will be produced weekly, by which means it is fully anticipated that profits will be realised equal to similar enterprises in America, some of which are dividing from the profits of refined oil between 10 and 20 per cent. per month amongst their shareholders.

The South of England Wagon Company has been incorporated, with a capital of 200,000l., in shares of 20l. each, to carry on a business in the Southern and South-Western Counties, similar to that which has proved so highly remunerative in the Northern and Midland Counties to the Railway Rolling Stock Companies. The company will let wagons either on ordinary hire or on the principle that after the hire shall have been paid for an agreed time the wagons shall become the property of the hirer, for both which classes of business there is a very ample field. To avoid all risk, the company does not propose to manufacture, and has made an agreement with a well-known manufacturing firm, which will secure a minimum return of 7½ per cent. per annum upon the paid-up capital of the company. The business will also be extended to foreign and colonial railways; and, whilst the directors have secured 7½ per cent. as the minimum, they entertain the most confident opinion that the annual dividends will be considerably larger.

The Alexandra Printing Ink Company, with a capital of 12,000l., in shares of 10l. each, has been formed for the purpose of acquiring a patent right for the manufacture of printers' ink of new materials, better quality, and more economic than those now in use. At a meeting of the promoters, held on Thursday, Mr. F. C. W. Brandt stated that the cause of the greater cheapness was that the base of the ink was a by-product obtained in the manufacture of an article newly introduced. The printers' ink trade he found to be a close monopoly, but when the various intricacies were examined into he discovered that there was ample room for a good business upon very remunerative terms. Mr. Driver said that he had ascertained that there were about 20 inkmakers in London and 6 in the country, and, from particulars he had obtained, he had been enabled to calculate that the consumption of printers' ink upon newspapers alone reached about 360 tons per month, which would give 12 tons per month to each manufacturer. They had 20 newspapers already using it, and the opinion he had heard expressed was highly gratifying; indeed, they would not be likely to use it unless it was superior, for the competition in the printers' ink trade was intense. Mr. Brandt having reported that there were sufficient shares taken to enable them to commence with, it was agreed that the business should be taken over on March 25. The factory, as it at present stands, is capable of producing about 3 tons per week, which would enable about 50 per cent. to be paid in dividends, and the purchase-money for lease, machinery, plant, &c., has been fixed at 3500l.—2500l. in paid-up shares and 1000l. in cash. It was stated that the plant alone was worth the amount to be paid in cash.

At Redruth Tackling, on Thursday, 2387 tons of ore were sold, realising 12,299l. 13s. 6d. The particulars of the sale were:—Average standard, 127l. 6s.; average produce, 6l.; average price per ton, 5l. 3s.; quantity of fine copper, 148 tons 4 cwt. The following are the particulars:—

Date.	Tons.	Standard.	Produce.	Price per ton.	Per unit.	Ore copper.
Feb. 9.	2436	128 0	6 0	5 0	15s. 6d.	177 11 6
" 28.	4901	128 0	6 0	5 0	15s. 6d.	78 17 0
March 2.	3608	128 0	6 0	5 0	15s. 6d.	78 8 0
" 9.	3116	123 0	6 0	5 0	15s. 6d.	81 3 0
" 16.	2387	127 0	6 0	5 0	15s. 6d.	82 18 0

Compared with last week's sale, the advance has been in the standard 2l. 2s., and in the price per ton of ore about 2s. 6d. Compared with the corresponding sale of last month, the advance has been in the standard 5l. 14s., and in the price per ton of ore about 7s.

At the Trelawny Mine meeting, on Thursday (Mr. Page in the chair), a dividend of 12s. 6d. per share was declared, leaving a balance of 1416l. to be carried forward to the credit of the next account. Details in another column.

At the Wheal Mary Ann meeting, on Tuesday, the accounts showed a credit balance of 2048l. 16s. 6d. A dividend of 512l. (10s. per share) was declared, and 1386l. 16s. 6d. carried forward. Capt. Peter Clymo, Hodge, Harris, and Stevens report that the stopes and pitches are producing much the same as they have for some time past.

At the Minera Boundary and Lower Eisteddfod Mining Company meeting, held at Shrewsbury, on March 9, a dividend of 2s. per 1l. share was declared for the March quarter. The state and prospects of the mine were considered highly satisfactory.

At West Maria and Fortescue Mines meeting, on Feb. 28, the accounts showed a credit balance of 66l. 17s. A call of 2s. per share was made. Reports were made from Capt. Skewes and Donnal, the agents; Capt. W. George, of Prince Arthur Consols; and T. Currie Gregory, C.E., which were considered satisfactory.

At East Pool Mine meeting, on March 13, the accounts showed a debit balance of 124l. 8s. The ore sales comprised copper, tin, arsenic, and wolfram. Capt. Garry and Mr. Hardhead hope to complete the building of the engine-house for the steam-stamps and to put on the roof in about a fortnight.

At South Exmouth Mine meeting, on March 1, a call of 8s. per share was made. Capt. Nicholls and Maund reported upon the various points of operation. The purser explained that the mine immediately adjoins, and is on the same lodes as, Frank Mills, which is now paying over 500l. per month profits. Capt. Nicholls is manager of both mines, and his confidence in the success of South Exmouth is undiminished.

The cross-cut is being driven in the 90 to intersect the lode, and efforts will be made to intersect it before the May meeting.

At Par Consols Mine meeting, on March 11, the accounts for the four months ending Dec. showed a loss of 1097l. 17s. 9d. A credit balance of 1079l. 17s. 9d. was carried forward. Capt. Packer, Rich, and Hosking say:—From our stopes and tribute pitches we hope to return for the next four months 25 tons of black tin per month. During the past four months we have sold upwards of 110 tons of black tin, but in consequence of the present very low price for tin, we have not been able to pay the cost of the mine; but had we realised the same price for our tin as at this time last year, we should have been able to pay the cost. Mr. W. Davis, the purser, announces that he has arranged for a renewed lease for 21 years, at a reduction of dues.

At Roskarnoweth Mine meeting, on Tuesday, the accounts showed a debit balance of 91l. 9s. 9d. A call of 5s. per share was made. Capt. Vivian, Angove, and Hosking reported upon the various points of operation. The arrears of call amounted to 169l.

At North Roskar Mine meeting, on Tuesday, the accounts for Dec. and Jan. showed a debit balance of 1168l. 0s. 7d. A call of 1l. per share was made. The arrears of call amounted to 350l. 3s. 9d. Capt. Vivian, Angove, and Hosking reported that they had sold 81 tons 13 cwt. 5 gr. 23 lbs. of black tin, showing an increase of 8 tons 0 cwt. 1 gr. 13 lbs. on the quantity credited at the last meeting. They could have returned a larger quantity of tin than they have yet done, but, in consequence of the great drop which has taken place in the price of that metal, it would only have created a greater loss, the principal of the stopes producing tinstone of such a low quality as could only yield a profit at a higher price than they have had for some time, but some of the stopes are now beginning to produce tinstone of better quality; so that they may conclude on increasing their returns in future, from ground of a profitable character, even at the present price of tin.

At the North Chiverton Mine meeting, yesterday (Mr. Edward Cooke in the chair), the accounts showed a balance of liabilities over assets of 803l. A call of 5s. per share was made. Details in another column.

At Treworliss Mine meeting, on March 7, the accounts to end of January showed a debit balance of 1221l. 8s. 6d. A call of 1l. per share was made. The new engines will be ready to work in about a month; Capt. Burges and Dunsan are watching the sales, in order to purchase the required materials, pitwork, &c., on the best terms.

At Wheal Ludcott and Wrey meeting, on Tuesday (Mr. J. C. Isaac in the chair), the accounts for the three months ending November showed a debit balance of 777l. 17s. 8d. A call of 5s. per share was made. Capt. R. Knapp reported that their new stamps—12 heads—recently set to work bids fair to assist considerably the future returns of the mine.

At Crown Consols Mine meeting, on March 6 (Mr. H. L. Phillips in the chair), the accounts for the four months ending Jan. 31 showed a credit balance of 639l. 3s. 3d. Capt. Joseph Vivian, Wm. Thomas, and Samuel Simons reported progress in sinking to the 40, and other points of operations, stating that "the mine is opening very cheaply, and the lodes are large, regular, and promising in character and composition, and that there are fair chances of success at no very distant period."

At Calstock Consols Mine meeting, on March 7, a call of 1s. per share was made, which would leave a credit balance of 452l. 10s. 7d. The tenders for 84 forfeited shares showed that of the purser to be the highest, which was accepted.

At Wheal Hope general meeting, on Wednesday, the accounts showed a debit balance of 637l. 7s. 2d., and an excess of liabilities 748l. 5s. 5d. A call of 5s. per share was made.

At the Gwydyr Park Consols Mine meeting, on Wednesday, the accounts showed a cash balance of 817l. 13s. 8d., and an excess of liabilities 81l. 3s. A call of 6d. per share was made.

At the British Slate Company meeting, on March 11 (Mr. John Robinson in the chair), a dividend of 4 per cent. for the half-year was declared. Details in another column.

At the Labuan Coal Company (special) meeting, on Tuesday (Sir J. D. H. Elphinstone, Bart., M.P., in the chair), the resolutions for the absorption of the company by the China Steamship and Labuan Coal Company were confirmed. The details appear in another column.

The Gellivara Company meeting, to be held on Wednesday, would have been held earlier had not the managing director, Mr. V. Kjellberg and the engineer, Mr. J. H. Tolm (whose presence on the occasion was considered indispensable), been unavoidably detained in Sweden. The value of the stock of wood lying on the company's estate is 55,204l., and the result, in addition to the shipments made during the summer, amounting to upwards of 20,000l., shows a profit on the operations carried on. Since the establishment of the company the directors have taken the necessary steps for carrying out the works connected with the railway and canalisation of the River Lulea. The statements received from Mr. Tolm, and from others who have visited the property, more than confirm the highest estimates formed of its value, and the directors have no doubt of the ultimate success of the undertaking. The difficulties are principally those of administration. The experience already gained will enable the board to improve the efficiency while curtailing the cost of management; and they look forward to the not very distant time when the completion of their communication between the interior and the sea will have enabled them to bring the company's mineral wealth to a profitable market.

The Universal Private Telegraph Company third annual meeting will be held on Wednesday. The directors congratulate the shareholders on the steady progress in the business of the company, showing the gradual appreciation by the public of Prof. Wheatstone's valuable patents, now the exclusive property of the company. On Dec. 31, 1862, the gross rentals were 2499l. 5s.; on Dec. 31, 1863, they were 5421l. 8s.; on Dec. 31, 1864, they amounted to 8853l. 15s.; and the applications for new lines are rapidly increasing. The interim dividend of 6l. per cent. paid in September for the half-year ending June 30, 1864, is fully justified, and the directors recommend a dividend for the whole year, ending Dec. 31, at the same rate. The company's prospects among the coal proprietors in Newcastle, South Wales, and other mineral districts, are encouraging. In the West Highlands of Scotland a telegraph is contemplated, under substantial guarantee, showing a liberal return upon the capital to be expended; and, without going into details, it may be stated generally that the company's system is extensively spreading, as its special and exclusive advantages are becoming better known and appreciated.

The Master of the Rolls has appointed Mr. James Cooper, of the firm of Johnsons, Cooper, Wintle, and Evans, official liquidator of the West of England Lead Smelting Company (Limited); and Mr. Chatterley, the accountant, to be official liquidator of the General Rolling Stock Company (Limited).

Petitions for winding-up the Factage Parisien (Limited), and the Commercial Navigation Company of India (Limited), are to be heard before the Master of the Rolls this day.

Petitions for winding-up the West Par Consols Mining Company, and Pengenna Mining Company, are to be heard in the Stannaries Court this day and Monday.

THE COPPER TRADE.—Mr. J. Pittcairn-Campbell, of Liverpool, reports:—The market continues very firm, though quiet, for English copper, whilst foreign and the raw material show rather an advancing tendency, with a better demand. The sales in the fortnight have been:—

Mar. 1.—	35 tons bars, to arrive, per "Nauphante" .....	£81 10 0	per ton.
" 2.— <td>15 tons Urmenista Ingots, ex "Granadian" .....</td> <td>89 0 0</td> <td>"</td>	15 tons Urmenista Ingots, ex "Granadian" .....	89 0 0	"
" 3.— <td>50 tons bars, ex "Cape Horn" .....</td> <td>81 10 0</td> <td>"</td>	50 tons bars, ex "Cape Horn" .....	81 10 0	"
" 6.— <td>200 tons regulus, to arrive, per "Cuzco," on private terms .....</td> <td></td> <td>"</td>	200 tons regulus, to arrive, per "Cuzco," on private terms .....		"
" 6.— <td>100 tons regulus, at Swansea, ex "Rose of England" .....</td> <td>0 16 9</td> <td>per unit.</td>	100 tons regulus, at Swansea, ex "Rose of England" .....	0 16 9	per unit.
" 6.— <td>200 tons ore, at Swansea, ex "Alpha" .....</td> <td>0 16 9</td> <td>"</td>	200 tons ore, at Swansea, ex "Alpha" .....	0 16 9	"
" 7.— <td>150 tons Knockmahon ore, by tender .....</td> <td>0 17 3</td> <td>"</td>	150 tons Knockmahon ore, by tender .....	0 17 3	"
" 7.— <td>200 tons regulus, ex "City of Kandy" .....</td> <td>0 16 8</td> <td>"</td>	200 tons regulus, ex "City of Kandy" .....	0 16 8	"
" 8.— <td>90 tons ore, at Swansea, ex "Rose of England" .....</td> <td>0 16 9</td> <td>"</td>	90 tons ore, at Swansea, ex "Rose of England" .....	0 16 9	"
" 13.— <td>300 tons ore, at Swansea, ex "Martha Jackson" .....</td> <td>0 17 0</td> <td>"</td>	300 tons ore, at Swansea, ex "Martha Jackson" .....	0 17 0	"
" 14.— <td>100 tons bars, to arrive, per "Jasie Jamieson" .....</td> <td>82 0 0</td> <td>per ton.</td>	100 tons bars, to arrive, per "Jasie Jamieson" .....	82 0 0	per ton.
" 14.— <td>25 tons bars, on spot, ex "M. Jones" .....</td> <td>81 0 0</td> <td>"</td>	25 tons bars, on spot, ex "M. Jones" .....	81 0 0	"
" 14.— <td>25 tons regulus, on spot, ex "Nelson" .....</td> <td>0 16 9</td> <td>per unit.</td>	25 tons regulus, on spot, ex "Nelson" .....	0 16 9	per unit.

Oring being comparatively scarce, quotations for good qualities, particularly carbonates, are 16s. 9d. to 17s.; for regulus, 16s. 8d. to 16s. 9d. per unit; 81l. 10s. to 82l. for bars; Barilla being still rather nominal, say 18s. to 18s. 3d. Stocks of Chile copper ores, &c., likely to be available, as near as they can be estimated, are as follows:—

	Ores.	Regulus.	Bars.
Liverpool .....	1785	2234	2406
Swansea .....	4275	723	647

Arrivals since last have been:—

	Regulus.	Bars.	Ingots.
"Rapido," Valparaiso .....	46		
"City of Kandy," Coquimbo .....	307	4	
"Nippon," Caldera .....	527		
"Mexican," Colon .....			40 in transit.
"Ismyr," Valparaiso .....	5		
"Eden," Caldera .....	203		

Tin.—Considerable sales of Straits have been made during the fortnight at 88l., and the market closes quietly at 87l. to 87l. 10s. 561 bars of Peruvian have been disposed of, at 79l. 5s. per ton.

P.S.—A cargo of ore, ex "Warwickshire," was sold, by tender, on the afternoon of the 15th inst., at an average of 18s. 9d. per unit of produce.

COAL MARKET.—The fresh arrivals during the whole week only amounted to 63 ships. Household coals have been in good demand throughout, and a rise in price of fully 6d. per ton has been established. Hartley's have been a full supply, and demand inactive, at last week's quotations. In manufacturers' coals prices are slightly dearer. Heston Wallsend, 20s. 3d.; Hartlepool Wallsend, 19s. 6d.; East Hartlepool Wallsend, 19s. 6d.; Bradly's Heston Wallsend, 18s. 6d.; Hough Hall Wallsend, 18s.; South Kellow Wallsend, 18s.; Tunstall Wallsend, 17s. 6d.; Davison's West Hartley, 14s. 6d.; Cowpen Hartley, 14s. 6d.; Lamberton's West Hartley, 14s. 3d.; Bate's Tanfield, 13s. 9d.; Holywell Main, 15s. 6d.; Wylam Moor, 15s. 6d.; 12 cargoes unsold—45 ships at sea.

THE COAL TRADE OF THE UNITED STATES.—The anthracite coal trade of the year just passed amounted to 9,992,807 tons, being an increase of 557,624 tons. With the bituminous coal the total amount is 11,741,189 tons. The increase of domestic coal is 630,000 tons. The decrease in foreign coal was 490,167 tons. The colliery capacity of the different regions is ample to supply all the coal the market will require. Miners and labourers are more abundant. The supply of coal in 1865 will depend altogether on the transporting capacity to convey it to market.

OUR EXPORT COAL TRADE.—The exports of coal to France in December, 1864, presented a very considerable increase, as compared with December, 1863, but in January, 1865, there was a slight decrease, as compared with January, 1864. It is satisfactory to observe that 1865 has commenced well as regards the exports of coal to Prussia, 7100 tons having been shipped to that country in January, as compared with 2525 tons in January, 1864. We say it is satisfactory to observe this revival in the shipments to Prussia, because they declined to 346,172 tons in 1864, as compared with 523,300 tons in 1863, and 535,336 tons in 1862. The ex-

ports of coal to Denmark in December were 30,008 tons, but in January they declined to 18,228 tons. It is curious to observe, however, what a large amount of our coal this little country consumes; last year it took 604,002 tons, while Russia was a customer for only 475,054 tons, although 20 Denmarks would be swallowed up in the enormous territories of the Czar. The exports of coal to Spain last year were 346,096 tons, but this year there is a falling-off discernible, the exports to the Peninsula having sunk to 41,470 tons in January, as compared with 53,034 tons in January, 1864. To Italy—which took 345,482 tons of English coal in 1864, as compared with 277,597 tons in 1863—we sent only 19,230 tons of coal in January, as compared with 40,900 tons in January, 1864.

THE FOREIGN COAL TRADE.—Our exports of coal—that is, coal, cinders, and culm—have immensely expanded of late years. Thus during the last 15 years they have moved on as follows:—

Year.	Tons.	Value.	Year.	Tons.	Value.
1850 .....	3,351,880	1855 .....	4,976,901	1860 .....	7,321,892
1851 .....	3,468,545	1856 .....	5,879,779	1861 .....	7,885,116
1852 .....	3,640,194	1857 .....	6,737,718	1862 .....	8,201,823
1853 .....	3,335,062	1858 .....	6,529,483	1863 .....	8,275,313
1854 .....	4,309,355	1859 .....	7,009,919	1864 .....	8,500,420

From 1850 to 1857 there was an incessant advance; in 1858 there was a check, but 1859, 1860, 1861, and 1862 were years of progress. Again in 1863 there was a certain stagnation; but last year's figures were carried to a higher level than had been ever before attained in any twelve months; and, comparing 1864 with 1856, we see an advance—notwithstanding the warning voice raised by Sir William Armstrong in the autumn of 1863 on the necessity of economising our coal supplies—of no less than 5,448,540 tons, or 132.53 per cent. It is worthy of note that, notwithstanding the great efforts made of late years to increase the extraction of coal in France, the export of coal from Great Britain is not much below the production of France (11,100,000 tons in 1864). The temptation to send our coal abroad is reflected in the annexed statement of the value of the coal exports made year by year since 1850:—

Year.	Value.	Year.	Value.	Year.	Value.
1850 .....	£1,284,224	1855 .....	£2,446,341	1860 .....	£3,316,281
1851 .....	1,302,473	1856 .....	2,826,582	1861 .....	3,604,790
1852 .....	1,372,114	1857 .....	3,216,661	1862 .....	3,750,827
1853 .....	1,604,891	1858 .....	3,045,434	1863 .....	3,713,798
1854 .....	2,127,156	1859 .....	3,970,919	1864 .....	4,161,328

The total sum thus received by Great Britain from foreign countries for coal in 15 years was no less than 41,036,666l. It may be remarked that France is still our best customer for coal.

EAST WHEAL LOVELL.—The lode in the shaft sinking below the 40 fm. level has considerably improved, being now worth 85l. to 95l. per fathom. An inspection values it at 2 tons of tin to the fathom, which, at the present price of tin, would be about 100l. to 110l. per fathom. There seems to be no doubt that as they sink the richer will this lode become, and when the levels are extended east and west rich reserves of tin are expected to be opened up. Stopping ground is already available in the old shaft, sinking on the course of the lode from the 25 to the 40 fm. level; the value of this ground has been estimated at 100l., 120l., and as high as 200l. per fathom. On the south lode a rich course of tin has been gone through from the 17 to the 35 fm. level, varying in value from 80l. to 100l. per fathom. A cross-cut is being driven from the north lode to intersect this rich course of tin. The intersection will shortly be made, when, no doubt, large reserves will be opened upon; this is one of the most important points in the mine. It should not be forgotten that the Turnpike lode, at a few fathoms from surface, has been driven upon for some distance, and of an average value of 25l. per fathom—that level, as stated by Capt. Burges, can be driven at from 12s. 6d. to 20s. per fm. Flat-rods are being attached to the engine to develop this lode more fully, and the general belief is that it will turn out as rich, if not richer, than either of the other two lodes. There are several other side lodes that will be opened upon shortly.

## WEATHER PREDICTIONS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—My professional engagements of late have prevented me from saying anything in reference to the weather, neither have I time now to go into detail; but I may state that, to all appearance, we shall have a cold, dreary spring and wet summer; already we are in the middle of March, and the vegetation is in a very backward state for the time of year. Last year the rains deluged the more southern parts of Germany; this year we shall have the wet in Western Europe. As soon as I have more time I will again resume this subject, for the information of the readers of the Journal.—Throgmorton-st., March 16.

G. SHEPHERD, C.E.,  
Author of the "Climate of England."

## LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
March 10.—	Wheal Frank Mills .....	65	£20 1 0	Panther Co.
"	" .....	95	13 2 0	Trefry's Trustees.
"	New Crow Hill .....	2½	24 5 6	"
"	" .....	10	14 12 0	"
March 11.—	Wheal Mary Ann .....	70	26 7 6	Sims, Williams, & Co.
"	" .....	21	12 13 6	"
March 13.—	Frongoch .....	50	12 18 0	Burry Port Co.
"	" .....	35	12 16 0	"
"	" .....	25	12 16 0	Sims, Williams, & Co.
"	East Warren .....	75	15 15 0	J. & J. Williams.
"	Cwm Erfu .....	25	17 0 6	Panther Co.
"	" .....	40	17 9 6	"

## BLACK TIN.

Date.	Mines.	Tons.	q. lbs.	Price per ton.	Amount.	Purchasers.
Feb. 21.—	Cuddra .....	13	3 2 1	—	686 17 9	—
Mar. 14.—	West Beam .....	5	12 2 5	57 10 6	324 4 5	Enthoven.

## COPPER ORES.

Sampled March 1, and sold at Tabb's Hotel, Redruth, March 16.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
East Carr Bros. ....	77	£2 6 0	Wheal Margery .....	51	£5 2 6
ditto .....	74	4 1 6	ditto .....	46	4 18 0
ditto .....	56	5 17 0	ditto .....	45	2 1 6
ditto .....	54	7 9 0	ditto .....	44	5 18 6
ditto .....	51	8 19 0	ditto .....	43	3 3 0
ditto .....	49	3 17 0	East Rosewarne .....	51	9 10 6
ditto .....	45	6 1 0	ditto .....	40	9 3 0
ditto .....	40	6 19 6	ditto .....	34	7 1 6
ditto .....	22	5 6 0	ditto .....	30	14 0 6
West Basset .....	65	3 8 0	New Rosewarne .....	63	5 19 0
ditto .....	61	7 6 6	ditto .....	50	6 1 6
ditto .....	60	5 13 6	ditto .....	18	13 3 6
ditto .....	59	4 1 6	Trelaweth .....	41	2 18 0
ditto .....	54	4 0 6	ditto .....	36	2 18 0
ditto .....	46	5 0 6	ditto .....	14	13 5 0
ditto .....	40	9 18 0	Wheal Buller .....	55	2 2 6
ditto .....	19	10 5 0	ditto .....	27	6 8 6
Proper United .....	102	5 4 0	Par Consols .....	73	7 15 6
ditto .....	75	4 11 6	Tolwadden .....	46	5 0 6
ditto .....	73	1 8 6	ditto .....	25	3 3 0
ditto .....	58	4 13 6	Copper Hill .....	33	8 5 6
ditto .....	55	2 8 6	ditto .....	32	2 11 6
ditto .....	31	5 0 0	Pulham .....	41	4 11 6
Wheal Margery .....	71	2 2 6	North Breidden .....	30	1 11 6
ditto .....	70	2 2 6	Thomas's Ore .....	11	4 16 6



## WATSON AND CUELL'S MINING CIRCULAR.

WATSON AND CUELL,  
MINING AGENTS, STOCK AND SHARE DEALERS, &c.,  
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

Messrs. WATSON and CUELL having made arrangements for transferring their weekly Circular, which has had so large a circulation during the past ten years, to the columns of the *Mining Journal*, their special reports and remarks upon Mines and Mining, and the state of the Share Market, will in future appear in this column.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. J. Y. Watson, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium published in 1843 Mr. Watson was the first to recommend the system of a "division of small risks in several mines, ensuring success in the aggregate," and Messrs. Watson and Cuell have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and share-dealing than there is at present; and, from the lengthened experience of Messrs. Watson and Cuell, they are emboldened to offer, thus publicly, their best services to all connected with mines or the market, as they have for so many years done privately, through the medium of their own Circular.

Messrs. WATSON and CUELL transact business in the purchase and sale of mining shares, and other securities, payments of calls, receipt, and transmission of dividends, obtaining information for clients, and affording advice, to the best of their knowledge and judgment, based on the experience of more than 30 years active connection with the Mining Market.

Messrs. WATSON and CUELL also inform their clients and the public, that they transact business in the public funds, railways, docks, insurance, and every other description of shares dealt in on the Stock Exchange.

Messrs. WATSON and CUELL are almost daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

Messrs. WATSON and CUELL having agents and correspondents in all the mining districts, and an extensive connection among the largest holders of mining property, have the more confidence in tendering their advice on all matters relating to the state and prospects of mines and mining companies, and are enabled to supply shares in all the best mines at close market prices, free of all charges for commission.

"SINK YOUR SHAFT."—We are glad to state that the purser of Frank Mills, Mr. Wescomb, has taken the purser of Wheal Hope, and that Capt. Nicholls has been appointed managing agent. A special meeting has been called, for the purpose of forfeiting all shares in arrears of calls, and the forfeited shares will be disposed of for the benefit of the company. Mr. Wescomb, prior to undertaking the management, had the mine inspected by Captain Nicholls, as we suggested, and his report was of that satisfactory nature that he has bought up 1-5th of the mine. For the next three months rather a heavy outlay will be required, after which he thinks the mine will do well.

BOTTLE HILL.—When these shares were very low indeed we called attention to them in vain. The mine has been selling for about 10000, and has done better during the past four months than many mines selling at upwards of 20,000. For the next quarter there is every prospect of the mine making a profit.

WHEAL UNITY CONSOLS.—This mine has been specially inspected, and the following very satisfactory report handed to us:—"The flat-rod shaft is sunk 70 fathoms below surface, and sinking resumed below this level; the lode in the bottom is 2 feet wide, the ore or copper-yielding part of which is 1 foot wide, and will produce 1 ton per fathom, of a very promising character. The 70 west is driven 6 fathoms; the lode is 20 inches wide, and will yield full 1 ton of black and grey copper ore, and has been of much the same value for the whole drive. The same level east is only driven about 6 feet, having been engaged cutting plat, &c.; the lode in the end is 18 inches wide, worth 1 1/2 ton of copper ore per fathom, and presenting an exceedingly promising appearance; it has materially improved in appearance and value in the last 10 fathoms sinking, and should it so continue in the next 10 fathoms sinking, a good piece of mineral ground will, in all probability, be laid open. The stratum has also changed, being now of a light clay-slate, which is in this locality highly congenial for the production of mineral. The 70, west of sump-wine, is driven 9 fms.; the lode at present is split and disordered, and of no value; the same level east is driven 15 fathoms; the lode is 9 inches wide, producing a little copper, but insufficient to value. This level has, however, gone through some ore ground that will pay for taking away. It may not be amiss to remark that this mine is on the same lode as Rosewarne United and Rosewarne Consols—in fact, immediately adjoins the latter, which is being worked at a profit to the adventurers, and the former has of late effected such important improvements that it will, in all probability, become a dividend-paying mine ere long."

MANUFACTURE OF IRON.—An invention, the object of which is to expedite the fusion of the metal, whereby a great economy of fuel is effected, and also to improve the quality of the iron produced, has been patented by Mr. W. C. Cambridge, of St. Philip's Ironworks, Bristol. Two, three, or more sorts of iron ores are taken and crushed into pieces of about half an inch in diameter or less. A mixture of ores which will be found to answer the purpose consists of one-third part of calcined black and clay band ores, one-third part of brown hematite, and one-third part of red hematite. To each ton of such crushed ores about a bushel or a half of slaked lime, or any other suitable flux, more or less, according to the nature of the ore, are added, and about equal proportions of wrought and cast-iron turnings, filings, borings, shavings, or other small pieces of iron. The crushed ores and flux and the iron turnings or borings are to be mixed intimately together, with the addition of a sufficient quantity of water to bring the materials into a thick paste state. As the ingredients are thus brought into direct contact with each other the fusion of the ore in the furnace will be materially assisted, and a great economy of fuel will be effected. By this invention iron can be worked advantageously in small furnaces, and the fused metal tapped out as often as requisite, thereby leaving the molten iron a much shorter time than usual exposed to the action of the fire, and consequently a better and more even quality of metal can be produced than when smelting ores in the usual way. The quality of the iron will be improved by the addition of iron filings or turnings, and its special characteristics may be regulated by mixing these substances with the ore and flux in such proportions as the quality of iron required shall dictate. In practice it is found that from seven per cent. upwards (according as hardness or strength, or both, may be wanted) of these cast-iron borings or filings and wrought-iron turnings, or small pieces of either cast or wrought-iron, may be advantageously added to the other materials. The ore and flux, together with the cast and wrought-iron turnings, filings, or borings, are to be mixed into a stiff mortar-like paste, with water, which paste is to be subsequently formed into lumps or bricks, and then dried preparatory to submitting them to the action of the furnace. When bricks or lumps made in this manner are to be used in the furnace in combination with broken ore, the proportions of the iron filings are varied; for instance, the fine waste screenings of brown or red hematite ore, or both, are mixed with slaked lime in the proportion of about one and a half bushel of lime to the ton of pulverised ore, and thereto 10 cwt. of cast-iron turnings, borings, or filings, and about the same quantity of wrought-iron scrap, or turnings, or borings are added thereto. All these materials must be well mixed together, so as to form a thick paste, which may be pressed into bricks or lumps, and when dried such quantities of these lumps or bricks may be used with the lumps of ore in the furnace as the quality of the ore may require. Mr. Cambridge claims as his invention the mixing broken or pulverised iron ore with a suitable flux and water, so that the ingredients may be brought into a paste state, and formed into bricks or blocks, with the addition of cast or wrought-iron turnings, filings, borings, or other small pieces of iron, as set forth.

CHEMICAL COMPOSITION AND CALORIFIC VALUE OF FUEL.—Dr. A. T. Machattie's paper, for which he received the silver medal of the Royal Scottish Society of Arts, is printed in the new part of the Society's "Transactions." It contains a summary of experiments, with tabulated results. The fuels examined were dried wood and peat, coal, charcoal, and coke. The elements of these fuels in producing heat are carbon, oxygen, hydrogen, and a little sulphur. The useless and injurious elements are nitrogen and mineral ash. By means of a calorimeter, Dr. Machattie ascertained the relative powers of the combustible elements, and has printed in a tabulated form the units of heat each can produce, and the quantity of water which one pound of each can convert into steam from the temperatures of 32° and 60° Fahr. He finds that the calorific value of all kinds of fuel is not the same, either in regard to the quantity or intensity of heat produced; and that we must, therefore, consider them in regard to their steam-raising and thermal or pyrometric effects. In our furnaces a loss of heat is sustained by the latent heat of water vapour when the fuel is damp, by the latent heat of the water vapour when the fuel contains hydrogen, and by permitting the gases produced during combustion to escape by the chimney at a high temperature. Carbon is decidedly the best substance for fuel, and the nearer our fuels approach pure carbon the better. It requires so little oxygen for combustion, and therefore produces so little carbonic acid, and does not involve a large quantity of nitrogen from the air.

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending March 12 was 10,391, 15s. 3d.

## THE RHOS HALL IRON COMPANY

(LIMITED).  
To be incorporated under the Companies Act, 1862, whereby the liability of each shareholder is limited to the amount for which he subscribes.  
Capital £170,000, in 8500 shares of £20 each.  
Deposit on application £1 per share, and £1 10s. on allotment.  
Calls will be made according to the requirements of the company, but not at a less interval than three months, and will not exceed £2 10s. per share.  
Interest at 5 per cent. will be allowed upon all monies paid until the works are in operation.

The Hon. JOHN C. W. VIVIAN, 14, Belgrave-square, S.W.—CHAIRMAN.  
JOHN BUTTERFIELD, Esq. (Mining Agent to H. Williamson, Esq.), Tunstall, Staffordshire.  
R. COLLEMAN, Esq., Director of the Finn Valley Railway Company.  
J. H. CRAWFORD, Esq., Director of the Imperial Mexican Railway.  
The Hon. CHARLES HAY, 33, Cadogan-place, Belgrave-square, S.W.  
JOHN C. HARVEY, Esq., Ironmaster, London, North Staffordshire.  
WILLIAM THREDWELL, Esq., Railway Contractor, Handsworth, Birmingham.  
MANAGER—Mr. Henry W. Crosswell, Handsworth, Birmingham.  
BANKERS—The East London Bank (Limited) and branches.  
SOLICITORS.

Messrs. Vallance and Vallance, Lombard House, George-yard, Lombard-street; and 20, Essex-street, Strand, London.  
Messrs. Woodward and Son, Wednesbury.

AUDITORS.  
Messrs. Harding, Pulein, Whimsey, and Gibbons, Bank Chambers, Lothbury.  
BROKERS.  
Messrs. Froom Brothers, Change-alley, London.  
John Smith, Esq., Bennett's Hill, Birmingham.  
Daniel Croxall, Esq., Liverpool.

SECRETARY—Francis R. Spry.  
TEMPORARY OFFICES,—4, CLEMENT'S LANE, LOMBARD STREET.

## PROSPECTUS.

This company is formed for the purpose of purchasing and working the ironworks and mineral grant over a well-known extensive property, called the Rhos Hall and Llynwen Estates, situate in the county of Denbigh, near Raabon and Wrexham, in North Wales.

The grant comprises 266 acres, for a term of which 89 years are unexpired, and the property is held free from all rent and royalty whatever. The company have also the privilege of using the surface land adjoining that comprised in the grant, upon payment of a rental of £2 per acre. The purchase comprises the pits, furnaces, weighing machine, manager's house and office, and all the machinery and tools of every description.

The operations of the company will be directed principally to the manufacture of pig-iron. Two blast-furnaces have already been erected on the property, and 14 shafts sunk, from which ore to the extent of 150,000 tons, sufficient to supply these furnaces for three years, may be raised without much additional outlay. It is proposed to sink other shafts, and to erect one or two more furnaces. There is a good supply of coal on the estate, and if additional fuel be required it can be purchased from the neighbouring collieries at very moderate rates. The coke produced from the coal is almost free from sulphur, an advantage of the utmost value in the manufacture of pig-iron.

The ironstone already proved yields an average of from 30 to 40 per cent. of ore. The quality of other beds passed through, but not yet worked, appears to be equal to those already wrought.

The pig-iron manufactured at these works will command a ready sale: it will be eagerly sought for in Sheffield, Leeds, Manchester, and other leading iron-consuming districts. In quality it is equal, if not superior, to the best Yorkshire brands.

Two railways are in immediate contiguity to the estate, one of which, the London and North-Western, will, in the course of a few months, run within 60 yards of the furnaces. Unusual facilities are thus afforded for the ready transport of the pig-iron.

Fire-clay, vast quantities of excellent fire-clay exist on the property. The clay produces excellent bricks, chimney tops, drains and sewage pipes; also many articles of rustic ware.

Brick-works are also erected on the estate. Bricks can be manufactured at such a cost as to leave a considerable profit; and, independently of the economy in manufacturing them for the purposes of the additional works, there will be no difficulty in finding a ready sale for such as may not be required for this purpose, as offers have already been made to purchase all that can be manufactured at a very remunerative price.

The property has been surveyed and favourably reported upon by Mr. Beckett, of Wolverhampton, the well-known mining engineer, and Mr. Darlington, the metallurgist, of London. The reports of these gentlemen fully justify the conclusion at which the directors have arrived with regard to the remunerative character of the undertaking. The efficient management of works of this description being of the utmost importance to the promotion of a successful result, the directors have the satisfaction to announce that they have secured the services of Mr. Henry Crosswell (a gentleman of experience, and well known in the iron districts of Staffordshire) as resident manager.

A provisional contract has been entered into for the purchase of the lease and works on most advantageous terms—the vendor taking one-half of his purchase money in shares, on which no dividend will be paid until a dividend of 10 per cent. has been paid upon the other capital, and the remainder by cash instalments extending over a period of three years and a half.

The directors would draw special attention to these facts—that there are no royalties or rent whatever payable under the leases, that the works can be put into active operation within a few months, that the pig-iron and other mineral products command a ready sale, and that a railway already runs within a few hundred yards of the furnaces, and in the course of a few months will run through the estate.

With regard to profits, the directors are unwilling to make any statement which might appear exaggerated. They have, however, obtained from their manager a careful estimate of the cost of production and of the sale of their manufactures; and calculating at the rates at which pig-iron can be produced, and adopting the present low prices in the iron trade, and adding a reasonable sum for return from fire-clay and bricks, and after allowing an ample margin for expenses of management, interest on capital, and contingencies, there would be left a highly remunerative return upon the capital employed.

By the Memorandum and Articles of Association ample powers are conferred upon the company to extend their operations beyond the works mentioned in the prospectus.

Forms of application for the remaining shares, prospectuses, and every information may be obtained at the solicitors and brokers, or from the secretary, at the temporary offices of the company, 4, Clement's-lane, Lombard-street, E.C.

FORM OF APPLICATION FOR SHARES.  
(To the directors of the Rhos Hall Iron Company, Limited.)  
GENTLEMEN,—Having paid to your bankers the sum of £ , being a deposit of £1 a share on shares in the above company, I request you will allot me that number of shares, and I hereby agree to accept such shares, or any less number you may allot me; and I authorise you to insert my name in the register of members for the shares so allotted.  
Name.....  
Profession or business.....  
Dated the day of 1865. Address.....

## PROSPECTUS OF THE

EAST MAES-Y-SAFN LEAD MINING COMPANY  
(LIMITED), MOLD, NORTH WALES.

Incorporated under the Companies Act of 1862, and Table A of the Act is adopted as the Articles of Association for the government of the company.

Capital £50,000, in 5000 shares of £10 each.  
Deposit 10s. per share on application, and £1 on allotment.

Each share not to exceed £1 per share, and to be subject to one month's notice. It is not expected that more than £5 per share will have to be called up. If no allotment be made, the deposits will be returned in full.

DIRECTORS.  
CHARLES B. TREVOR ROPER, Esq., Plas Teg, near Mold—CHAIRMAN.  
ROBERT A. DAGG, Esq., Chetwynd House, Oxtord, Birkenhead.  
THOMAS HANMER WYNNE, Esq., Nerguis Hall, near Mold.  
WILLIAM TREVOR ROPER, Esq., the Temple, Liverpool.  
FRANK P. MATTHEWS, Esq., Llynfa, Mold.  
ROBERT WILLIAMS, Esq., Ty Ucha, Mold.

(With power to add to their number.)  
BANKERS—Messrs. Dixon and Company, Eastgate-street, Chester.  
National Bank, Mold.

SOLICITOR—George E. Trevor Roper, Esq., Mold.  
BROKER—George Edwin Tarrant, Esq., York-buildings, Liverpool.

SECRETARY—Mr. J. Caldecott.  
OFFICE,—19, PEPPER STREET, CHESTER.

This company has been formed for the development of a very extensive tract of mineral ground, comprising five distinct sets, viz., Bryngwyn, Pwll-y-wheel, Fron, Nerguis, and Brynolwyn, which are considered by engineers and practical miners to form one of the richest pieces of mineral ground in North Wales, as will be seen in their reports. They are situated on the Mold mountains, two miles south-west from Mold, are surrounded by dividend-paying mines, and are held by fair and equitable leases for long terms, at 1-12th royalties, from the lords of Mold and other owners; the surface area comprises 400 acres, or thereabouts. Several fair-sized shafts, from 60 to 130 yards deep, have been sunk at various points on them, which will be available for future operations, and from some of which ore can soon be raised; indeed, the shaft marked A on the map, on the east or lower portion of the Bryngwyn set, was sunk 90 yards to the road, where 176 tons of ore were raised out of a very small space, marked black on the map, and the vein, 18 ft. wide, containing a solid rib of ore 2 ft. thick, continued its course down-hill below the water-level.

Pwll-y-wheel engine-shaft was sunk 131 yards deep, and a cross-cut was driven south 80 yards, at the 120 yard level (intersecting in its course three other productive runs of ore), to cut this vein in the Pwll-y-wheel set; this was done, and the ore sunk on for 13 yards, but the water issuing from it was too much for the existing machinery, and the mine was stopped for want of means. A new shaft, marked B on the map, 9 ft. by 6 ft., has been sunk down 80 yards dry. It is proposed to erect on this shaft a new set of the richest pieces of mineral ground in North Wales, as will be seen in their reports. They are situated on the Mold mountains, two miles south-west from Mold, are surrounded by dividend-paying mines, and are held by fair and equitable leases for long terms, at 1-12th royalties, from the lords of Mold and other owners; the surface area comprises 400 acres, or thereabouts. Several fair-sized shafts, from 60 to 130 yards deep, have been sunk at various points on them, which will be available for future operations, and from some of which ore can soon be raised; indeed, the shaft marked A on the map, on the east or lower portion of the Bryngwyn set, was sunk 90 yards to the road, where 176 tons of ore were raised out of a very small space, marked black on the map, and the vein, 18 ft. wide, containing a solid rib of ore 2 ft. thick, continued its course down-hill below the water-level.

The several leases of these valuable sets, together with the washing-floors, buildings, plant, and machinery thereon, have been transferred to the company free of every other preliminary expense, by the vendors, for £2000 in cash and 500 paid-up shares of the company (such shares not to be transferable until all the shares have been allotted), and a further sum of £2000 whenever the mine is capable of paying a dividend of 20 per cent. on the paid-up capital. These terms are considered very reasonable, bearing in mind the great worth of the property, and the expense and trouble incurred by the vendors in purchasing the interests of old companies, and obtaining new leases.

These mines have been inspected and reported on by practical mining engineers and mining authorities of high position and respectability, some of whom having seen the ore proved at Bryngwyn and Pwll-y-wheel when last at work, speak positively to its existence in very large quantities, and particular attention is requested to their reports and the map and section accompanying them. Among the printed reports are those of Mr. T. L. Cottingham, mining engineer, Mold; Mr. Robert Williams, agent to the lords of Mold; Mr. Abasom Francis, Meadow-house, Holywell; Capt. John Pryor, mining agent, Mold; and Capt. Francis Evans, Bryngwlog Mines, Holywell.

A considerable number of shares are already subscribed for. Prospectuses, reports, plans, and forms of application can be had from the secretary, at the office of the company in Chester, or from the solicitor, at his office in Mold. Chester, March 4th, 1865.

## WHEAL ESTHER UNITED TIN MINES, NEAR BODMIN.

CORNWALL. On the "COST-BOOK SYSTEM."  
To provide machinery, &c., for further development, the adventurers offer one-third of their interest, in one or more lots. There is ample water-power, the tin is of good quality, and the sets, 1 1/2 mile east and west, contain seven well-defined lodes. One large lode lately opened on the back has tin enough near the surface to yield profit when drained. The property has been inspected and favourably reported upon by Mr. N. Ennor, of Featherstone-buildings, Holborn; Capt. Wm. Teague, of Tincroft Mine, Redruth; and other experienced agents.  
Further particulars may be known of the purser, Mr. J. H. Drew, Bodmin.

## THE DEVON GREAT MARIA CONSOLIDATED COPPER MINING COMPANY (LIMITED).

Capital £50,000, divided into 5000 shares of £10 each.  
Deposit £1 per share upon application, and £1 per share upon allotment.

DIRECTORS.  
CHARLES JOSEPH CARTAR, Esq. (Coroner for Kent), Catherine House, Blackheath, S.E.

JOHN JOHNSTONE, Esq., J.P., Friarstown House, Leirtrim, and 31, Belgrave-street, S.W.

JOSEPH TILSTON, Esq., Chesham-place, Baywater, W.

BANKERS—The Metropolitan and Provincial Bank (Limited), 75, Cornhill, E.C.

SOLICITOR—Frederick W. Snell, Esq., J. George-street, Mansion House, E.C.

ADVISOR—Sydney G. Smith, Esq. (public accountant), 19, Coleman-street, E.C.

LOCAL MANAGER AND PURSER—Capt. Richards.  
SECRETARY—Mr. Thomas Spargo.  
OFFICES.  
Nos. 224 and 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C.

## PROSPECTUS.

This company has been formed for the purpose of working an extensive mineral property, situated immediately to the west of the celebrated Devon Great Consols, which, upon an outlay of £1024, has paid in dividends £945,152, the present value of that property being £388,800.

The geological position of the two mines is identical, and the same lodes pass through the entire length of the set; it is, therefore, reasonably expected that equally favourable results will be realised.

Upwards of £15,000 has already been expended upon the property in opening up the lodes and making the necessary erections for a great and permanent mine, independent of which £1500 has been paid to the lord in advance, on account of dues.

The total outlay required to bring the mine into a profitable state of working has been carefully investigated, and cannot exceed £10,000.

The directors have the utmost confidence in recommending this investment to their friends and the public. It has elements of success equal, perhaps superior, to any mining enterprise undertaken since the issue of shares in the Devon Great Consols Mine, &c. More than one-half of the entire capital is already subscribed.

Applications for shares to be accompanied by a deposit of £1 per share, and £1 per share will have to be paid on allotment.

The operations at the mine are being carried on with all possible dispatch, under the able superintendence of Capt. Richards.

Prospectuses, reports, plans, and forms of application for shares can be had from the secretary or bankers.

## THE SAN PEDRO DEL MONTE SILVER MINING COMPANY (LIMITED).

Under the Companies Act, 1862, by which each shareholder's liability is limited to the amount unpaid on his shares.

Capital £75,000, in 15,000 shares of £5 each.  
10s. per share to be paid upon application, and 10s. on allotment.

No call to exceed £1 per share, nor to be made at intervals of less than two months.

LEUT.-GEN. SIR RICHARD BIRCH, K.C.B., Jermyn-street, St. James's (late Military Secretary to the Government of India), CHAIRMAN.

DAVID WILSON, Esq., East India merchant, 79, Cannon-street, London (Chairman of the Washoe United Gold and Silver Mining Company).

ALEXANDER CALDER, Esq., Hotham-villas, Putney (Director of the Marine Investment Company).

JAMES JOHN FROST, Esq., shipowner, London-street, London (Director of the Orona Coffee Company).

EDMUND LYNCH NUGENT, Esq., New-square, Lincoln's-inn (Director of the Washoe United Gold and Silver Mining Company).

JOHN RANDON WORCESTER, Esq., East India merchant, Cannon-street, London (Director of the Ceylon Coffee Company).

HENRY HART POTTS, Esq., Maldstone (formerly Superintendent at Bombay to the Peninsular and Oriental Steam Navigation Company).

Capt. THOMAS BLENKINSOP WHITE, Vauxhall Park, Blackheath, and late of Hong Kong.

BANKERS—The Agria and Masterman's Bank (Limited), Nicholas-lane, London.

SOLICITORS—Messrs. Courtenay and Croome, 9, Gracechurch-street, London.

BROKER—John Inchbold, Esq., 2, Caphall-cour, and Stock Exchange, London.

SUPERINTENDENT IN MEXICO—W. H. Chynoweth, Esq.

AGENTS IN MEXICO—Messrs. Lobos and Sons.

SECRETARY—Mr. J. A. Robertson.

OFFICES,—79, CANNON STREET, LONDON, E.C.

The directors have entered into a provisional contract for the purchase of the San Pedro del Monte Silver Mines, situate near the town of Istanpol del Oro, in the province of Mexico, and about two days' journey by road from the capital.

By the maps, surveys, and reports furnished to the directors, including the map certified by the authorised Government mining engineer, and his report upon the mines, the property is shown to consist of two great lodes, called the San Pedro and Santa Rita, and two other lodes running parallel with them. The San Pedro and Santa Rita mines have been opened and partially worked, and now produce silver ore of great richness, and contain a valuable ley of gold. The other two lodes have not been worked, but promise to be as good as the San Pedro and Santa Rita.

The four lodes run north and south, and Captain Eastwick reports that he has traced them at the surface to the great mine of Tlalpujahua, out of which Mr. Laborde in three years raised ores to the value of more than seven millions sterling. The vendor displays his confidence in the success of the company by agreeing to take the whole of the purchase money in fully paid-up shares, notwithstanding that a very large sum has already been expended in bringing the mines to their present condition. His reason for selling the mines is that he has not sufficient capital to erect smelting and reduction works, and properly conduct the business.

It will be seen from the reports that no large outlay will be required to bring the mine into a paying condition, and that the ores are plentiful and exceedingly rich in quality. Samples of it assayed at the Imperial Mint in Mexico yielded 11 ozs. of silver per quintal (100 lbs.), or 246 ozs. to the ton, and 20 grains of gold per marc (eight ounces).

Three samples assayed by Mr. Henry Gay, of Panther Leadworks, Bristol, yielded respectively 66 ozs., 170 ozs., and 324 ozs. of silver per ton.

Assays of three samples taken from different parts of the mine have been made by Messrs. Johnson, Matthies, and Co., assayers to the Bank of England, with the following most satisfactory result:—

"Assay Office and Ores Floors, Hatton-garden, London, E.C., July 7, 1864.  
Certificate of Assay.

We have examined the samples of minerals marked as under, and find the following to be the result:—

No. 1 ..... Produce of gold—traces only—per ton of 20 cwt.

No. 2 ..... " silver—ozs. 72-000 "

No. 3 ..... " gold—1-975 "

No. 4 ..... " silver—88-900 "

No. 5 ..... " gold—0-975 "

No. 6 ..... " silver—372-680 "

JOHNSON, MATTHIES, AND CO.

Certificates of Assay by Messrs. Rothschilde's Assayer.

"Assay Office and Laboratory, 6, Coleman-street, London, 4th February, 1865.

DEAR SIR, I have examined the sample of Mexican ore forwarded on the 1st inst., and find the following to be the results:—

Stone showing a considerable amount of galena, grey ore, and some metallic ore.

Silver ..... 970 ozs. 0 dwts. per ton of 20 cwt.

Gold ..... 9 16 "

Dry siliceous-looking stone, with a few specks of grey ore.

Silver ..... 14 ozs. 9 dwts. per ton of 20 cwt.

Gold ..... 3 3/4 "

(Signed) Yours truly, FRED. CLAUDE.

To the Directors of the San Pedro del Monte Mining Company.

There is an abundant supply of timber in the immediate neighbourhood of the mine, and labour is cheap and plentiful. Ample water power is available for the purpose of drainage, and for the supply of the reduction works.

The company will possess this property in perpetuity, free from royalties and charge of any kind whatever.

The silver mines in Mexico have long been celebrated for the great riches which they yielded for centuries to the Spaniards; and now that the country again has a settled Government under the Emperor Maximilian there is little doubt that its vast mineral wealth will command the attention of European investors.

Mr. Chynoweth, the present proprietor, who has resided in Mexico and been connected with mines there for twenty years, has agreed to become the company's superintendent in Mexico.

Captain John Eastwick, who is considered one of the best practical miners in Mexico and was for several years in the employ of the Real Del Monte Company, is now engaged on the San Pedro del Monte Mines, and the directors will retain him as mining captain.

From the before-mentioned reports it appears that rich ore can at once be raised, and that as soon as smelting and reduction works are put up the company will be able to bring silver into the market;



## Notices to Correspondents.

**HOWELL'S CRUSHING-MACHINE.**—Can any of your readers inform me as to the success of Howell's crushing-machine; its cost, and its comparative economy, as compared with stamps and other modes of pulverising?—M.

**EAST WHEAL HIRKELL.**—Can any ingenious shareholder obtain a return of the amount paid by this company for telegrams? I do not think the sum expended by shareholders could be even fairly surmised; but the charges by the agents in communicating the different changes which have occurred from time to time would be interesting. Surely we must have been excellent customers to the Telegraph Company.—A SHAREHOLDER: Mining Exchange.

**CREASE'S BORING-MACHINE.**—Having written a letter some few months since for insertion in your valuable Journal, making some enquiries about this machine, I drew an answer the following week from the purser of the South Bedford and East Gunnedale Mine, stating that your correspondent need not have taken the trouble to send to London to make enquiries concerning it, when he might obtain any information he required at the mine. Having been there several times since, hoping to see it in full operation, I have been disappointed each time, not only in not seeing the machine at work, but in not meeting your obliging correspondent, the purser, from whom I had hoped to have gleaned some information respecting the time when it was likely to go to work, and likewise his opinion on it, as I know he has had something to do with the machine, and is the only person who could learn at the mine what they were boring-machines before. The question I would ask of the manager of the mine is, has the driving of this level been suspended, now nearly twelve months, waiting the erection of this machine, when it might have been driven a great many fathoms, and perhaps of this level some valuable discoveries are this; and instead of the shareholders having to pay calls, the mine might have been in a position to pay its own cost?—MINE AGENT.

**BORING-MACHINE.**—Twelve months have passed, and patience is almost exhausted waiting to hear the result of the trial of Crease's boring-machine at East Gunnedale Mine, which the purser promised the public should be made acquainted with. He should speak out, and if it answered their expectations all the better for miners, and relieving manual labour; but if it fails, say so, when manual boring and manual labour must prevail. Some say that it will require a 24-in. cylinder engine to give sufficient power to bore. It is the case, the expenses incurred with an engine would be expensive boring. Some particulars of its capabilities, no doubt, would confer a favour on the mining community, who are well-wishers to its success.—MALLEY.

**WINDING-UP MINES.**—It is much to be regretted that liquidators generally are so very dilatory in the payment of the dividends which the realisation of the assets admit of. I am a shareholder in the River Tamar and several other mines, in which I certainly think there has been unnecessary delay.—SHAREHOLDER.

**CALSTOCK CONSOLS.**—I think the shareholders in this mine may congratulate themselves on the report lately presented to them at the meeting, and the fact of the purser having taken 84 forfeited shares at a higher price than anyone else would give proves that he has good hopes of the mine. I believe he holds about 600 shares himself, and that he will not sell them. I know that parties in London have bought a large number of shares for two months, on feeling sure that the Danescombe lode, when the soft channel of ground is reached in 20 fms. driving, will prove very valuable.—A LARGE INVESTOR.

**EAST GUNNEDALE AND SOUTH BEDFORD MINES.**—In reply to "Shareholder," I beg to inform him that the reports for February 25 and March 4 were forwarded to our office in London from the mines in due course.—W. G. GARD.

**GREAT LAXEY, AND ITS MANAGEMENT.**—It may be said that, as a shareholder in this property, I should be content with its great prosperity. As a commercial man, I say No. All the companies to which I, and many other of your readers, belong are not in so satisfactory a position; therefore, I intend we should, as a rule, obtain all the advantage to be derived from those which make returns. I am not an alarmist, neither am I going to detail all the little innumerable I have heard, both here and at the mines; but I may suggest that, as the best means not only of allaying suspicion, but of proving their sincerity, the directors should themselves propose the formation of a committee of shareholders, to investigate all the charges, for the management, &c., previous to the general meetings. Our sales of ore are very large, and I trust the profits will increase; but the expenses, as I hear, can be greatly modified without at all interfering with the proper working of the concern. Now that smelting works are to be constructed it is even more necessary that due vigilance should be exercised in the checking of unnecessary outlay. I have every confidence in our Chairman and those officials who take an interest in the management, but it must be known to some of them that objection has been taken to what may be termed matters of detail, which can and should be rectified. I may add that we should be much better satisfied if the directors would arrange for Capt. Rowe to confine himself more to our mine: such extensive works require, and should have, very close attention; and it cannot be necessary that every Laxey—East, West, North, and South—should be "under the management of Capt. Rowe, of Great Laxey Mine," though they may have that particular lode from which "all the riches are obtained" running through their sets.—A SHAREHOLDER: Listerpool, March 14.

**CROWM MINE DISTRICT.**—Mr. Symons's paper shall appear in next week's Journal. Received.—Mentor "J. Y." Miner" (Cambridge).

## THE MINING JOURNAL

### Railway and Commercial Gazette.

LONDON, MARCH 18, 1865.

With reference to the great Strike and Lock-out in the Iron Trade, we remarked, in last week's MINING JOURNAL, that we trusted the time is not far distant when puddling by manual labour will be entirely superseded by some efficient mechanical application; and it may now be well to consider in what direction we should look for the wished-for improvement. The character of pig-iron, crude as it leaves the blast-furnace, may for our present purpose be regarded as capable of change by two, and only two, distinct processes—that of puddling and that of refining—but it must be remembered that the nature of the change, according as the one or the other process is employed, is widely different; a properly puddled iron possesses qualities which could never be imparted to it by refining. The correspondent of the *Times*, who writes over the signature of "Y.," appears to regard the BESSEMER process as that likely to remedy the evil which the ironmaster has to encounter through the exactions of the puddlers; but, although we admit that there are very many cases in which steel can be successfully substituted for wrought-iron, we opine that the general substitution of steel for iron is by no means practicable. It must be understood, moreover, that the metal we are now referring to as steel is really the metal produced by the pneumatic process, which differs materially from true steel, and is far more suitable as a substitute for iron, both from its difference in texture and its lower price.

Abandoning, then, the hope of superseding the use of puddled iron, or of iron similar in character to that produced by the manual labour of the puddler, we must consider what substitute for that labour presents itself, and we find that as yet two systems of machine-puddling have been proposed; according to one the ordinary puddlers' tools are worked by machinery; according to the other the operation of puddling is sought to be achieved by a mechanical arrangement, distinct from that which has been generally in use. Now, anyone who has either handled the "rabble" or watched the process of puddling must, we think, speedily come to the conclusion that it is hopeless to expect successfully to place the rabble in the hands, if we may use the term, of a machine, since the movement of the rabble in the furnace is guided entirely by the feel in the hand, a degree of judgment being required which, of course, could not be imparted to a machine, the movements of which must be limited to continually recurring series, so that about half the time the rabble would be where it was not wanted. We fear that the attempt to remove the objection could only result in such a complicated contrivance as would be practically useless.

We must next consider the proposition for substituting a distinct mechanical arrangement for the present puddling process, which we are certainly inclined to regard as more practicable. The first attempt to dispense with the ordinary puddling tools in producing a material similar in character to puddled iron was made in 1853, by Messrs. WALKER and WARREN, according to whose invention the iron is conveyed from the ordinary blast-furnace in the fluid state to the improved puddling furnace, which consists of a rotating vessel, equivalent to the melting chamber or hearth in an ordinary puddling furnace, and which is heated by a furnace at the end of it in the same way. This containing vessel is made of iron, lined with fire-brick, and is inclined at an angle to its axis of rotation. The molten metal being introduced into this revolving hearth, the puddling is effected without the aid of manual labour, the rotation of the vessel producing an agitation in the mass very similar to that produced with the puddlers' tools. It will be seen that the metal is submitted to a reverberatory flame as in the ordinary puddling furnace, and that although the stirring tools are dispensed with, the mass is quite as effectually turned and returned by the continual movement of it on the side of the chamber.

It is this invention which Mr. WILLIAM MENELAUS is now bringing into thoroughly practical working order at the Dowlais Ironworks, and from the work which has been turned out with it no doubt need remain that the days of puddling by hand labour are numbered. We trust in our next to be enabled to give a detailed account of the modifications which have been considered necessary at Dowlais, but in the meantime may observe that, in our opinion, the great advantage to be expected from this system of puddling is that the quality of the iron produced will be even better than that which has hitherto been obtained by manual labour. The great secret of good puddling consists in submitting every portion of the iron under treatment to the action of the flame, and since in a furnace which revolves upon a horizontal axis, and more especially in one which has its sides slightly inclined to that axis of rotation, the various portions of the

molten mass would never be likely to fall twice in the same position, the principle upon which the machine is constructed appears to us as correct as it is simple, and, if wrought-iron is to be produced by mechanical means at all, it must be by some such arrangement as this.

## FOREIGN MINING AND METALLURGY.

As regards the French iron trade, we have only to confirm former statements. Transactions are greatly restricted, and prices continue to be bad. Charcoal-made pig remains without business, at 47. 12s. per ton, while pig produced half with coke and half with charcoal has made 44. per ton. Rolled irons have made 84. 12s. to 84. 16s. for first-class merchants', with a scale of 4s. to 8s. per class; sheets, 94. 4s. to 94. 12s. per ton first-class, with a scale of 12s. to 16s. per class; special iron, 84. 16s. to 91. first category, with a scale of 4s. to 8s. per class. Machine iron is not in active demand. No. 20 has made 91. to 94. 4s. The question of the proposed railway from Vassy to St. Dizier is arriving at its solution. A contract has just been signed between the Eastern of France Railway Company and the committee of a projected line known as the Blaise, for the construction and working of the undertaking. Some formalities remain to be carried out with reference to the concession, but they will soon be fulfilled. According to data put forth by M. Héron de Villefosse, the whole of Europe produced in 1864 only 825,000 tons of pig. This production now amounts to 6,800,000 tons annually. In this total France figures in 1864 for 1,180,000 tons, thus coming next, as a producing nation, to Great Britain. The annual general meeting of the French Syndicate of Internal Navigation has just taken place. It was presided over by M. Chagot, one of the deputies of the Corps-Législatif. The report presented to the meeting entered into details on the situation of water transport industry in 1863, the conditions of the competition undertaken between navigation and railways, the state of navigable streams, and the works in progress. The report insisted on the prejudice occasioned to boat-owners and the public interests by the delay experienced in connection with the completion of those works, and of projects on which depends the realisation of the promise made by the Government at the period of the Treaties of Commerce to establish a just competition between canals and railways, and to undertake, with indefatigable solicitude, all means of communication intended to promote cheap transports. The report argued that a just competition between railways and navigable streams cannot exist while these last are incomplete, and are submitted to variations of régime, which render traffic upon them as uncertain as it is costly; while the principal lines are united only by water-courses, on which navigation is impracticable during a great part of the year in consequence of the insufficient depth of water which they present. The report showed that navigation had revived with difficulty from the state of decadence into which it had fallen (when the Government, by purchasing the canals, and reducing the tolls upon them, came to its aid), and has not been able to regain the ground since 1855, being doubly affected by competition, both in tonnage and in the nature of the goods transported. Finally, the report treated of the suppression of navigation duties, a measure loudly called for by the national industries as a compensation due to them for facilities given to the competition of foreign products. A suppression of these duties is called for, it was contended, by the freedom from taxation which transports enjoy both on roads and on railways, notwithstanding the immense sacrifices which the State has imposed, and still imposes, on itself in order to promote the rapid completion of the iron network.

It was hinted, we believe, on a recent occasion, under this head, that a contract for rails concluded by the Belgian Syndicate with the Turin and Savona Railway Company was not a very brilliant affair as regards price. This price, we may now add, was fixed at 77. 17s. 6d., with deliveries at Genoa or Savona. The same company will still have to conclude contracts for the delivery of a rather considerable quantity of rails, which will be, probably, reserved to French works. Belgian works have just also attempted the negotiation of a contract for rails with MM. Vitell, Piccard, et Cie, on account of the Ciudad Real and Badajoz Railway Company. These rails, which are required for a branch to Belmez, were, however, let to an English establishment at the rate of 74. 4s. per ton, delivered at Lisbon. The lowest offer made by Belgian Industrials was 64. 8s. per ton, delivered at Antwerp, which, with 14. per ton for transport, amounted to 78. 8s. per ton at Lisbon. A rather considerable number of rails for the same line was also ordered at 64. per ton, with a scale of only 1s. 3d. per ton per class. On the whole, the course of recent events shows the error of the notion that it would always be easy for Belgian producers to run off their constantly increasing make of iron. The house of Dorel, Frères, of Acoz, has fitted up an establishment with tools for the fabrication of girders; it can now accept orders, with deliveries at the end of April. Builders and contractors will thus in future enjoy the advantage of a competition with reference to girders, which have hitherto been a monopoly, as it were, of the Providence Company, at Marcinelle. We find one or two passages in the report just presented to the shareholders in the Great Luxembourg Railway Company which are worthy of reproduction. Thus, the directors observe:—"In 1861 we executed a branch to Longwy. This branch, which has a length of about 7½ miles, and which cost about 60,000l., was executed with various objects, and we have every day reason to congratulate ourselves upon having constructed it. By this line we penetrate to the rich minerals of Athus, the Madeleine, Radange, Mont St. Martin, and Longwy, which will assure us when they are in full working a considerable traffic towards Belgium. On another side, this line procures us transports from Belgium towards France, by enabling us to bring Belgian coal and coke up to the points at which minerals are extracted. This state of things is in the highest degree favourable to the construction of metallurgical establishments in France, and 11 blast-furnaces are now in construction, while others, which were extinguished, will be shortly put again in activity. In the course of 1863 several newly-constructed blast-furnaces will thus be lighted." Referring to the Ourthe line—which will be wholly opened in May or June, and finally completed in January, 1866—the directors add:—"We are convinced that this line possesses numerous and great elements of prosperity. Lige is rich in coal of all kinds, and to transport it either into the Grand Duchy of Luxembourg or into the very industrial French department of the Moselle it has been hitherto necessary to make a freight, which the Ourthe line will diminish by 28 miles. Lige possesses, besides, a metallurgical establishment, which will supply themselves not only with the minerals of the Ourthe district, but which will seek them as far as the extremity of our line towards Longwy. Thus, thanks to the diminution of distances resulting from the construction of the Ourthe line, Lige becomes of the works of the Grand Duchy and a part of France the most favourable source of supply for coal and coke; and the Grand Duchy and frontiers of France become accessible on the best conditions to the metallurgical establishment of Lige as regards supplies of minerals. Other products of the Luxembourg, such as wood, stone, &c., which could scarcely support the over charge resulting from a detour of 28 miles, will henceforth arrive on favourable terms in the Lige market, and will support there a competition with similar products coming from other districts."

We may note the payment of several dividends. The Couillet Company will pay, March 31, the interest which has accrued upon its shares for the exercise 1864-5, or 11. per coupon. The Antwerp Steamboat Company paid, March 6, a dividend of 84. per share. The Mechanical Company, trading under the title of J. F. Call et Cie, will pay, April 1, the balance of the dividend for 1863-4, or 21. 4s. per share, of which 11. per share will be in specie, and 10. 4s. in a bond of liquidation, bearing interest at the rate of 5 per cent. The dividend of the Rive-de-Gier Coaleries Company, for the second half of 1864, is fixed at 5s. 10d. per share. The shareholders of the General Spanish Mining Company have voted in favour of a dissolution of the undertaking, in preference to fresh appeal for capital. This is one of the undertakings created by the General Credit Company of Spain.

The foreign copper markets exhibit a slight improvement. There has been a little more animation on the Paris market; Chilean has been quoted there at 837. per ton; other sorts without change. At Havre, Chilean in bars has provoked an active current of affairs; about 83 tons have been dealt in at 831. per ton, and this rate is now maintained; copper from other sources of supply remains neglected on this market. The stock on the market might be subdivided as follows:—United States, 121 tons; Chilean, in bars, 6200 tons; ditto, minerals, 900 tons; ditto, from other sources of supply, 200 tons; altogether 6196 tons. The Hamburg market has been quiet; hopes are entertained that the low price current will bring forward some speculative orders. At Cologne, there has been rather a better demand for consumption; the Berlin market is also a little firmer. The tin markets show very little variation. At Amsterdam and Rotterdam, Banca has been dealt in at 57. 10s. for lots of some importance, and 57½d. to 58d. for small sales in detail. The Paris market has been quiet, and prices have not been quite so firm; Banca has been quoted 100l. to 102½l.; Detroit, 94l. to 96½l.; and English, 95l. per ton. On the Antwerp market some blocks of Banca have been dealt in at previously quoted rates, to meet consumptive requirements. Some small orders have been executed at Hamburg; the Berlin, Cologne, and Stettin markets have remained without notable change. Affairs in lead show generally but little activity, and prices have been in consequence nearly nominal. At Paris, the article has been quiet, and prices have been maintained at their former level. At Rotterdam, Stobberg has been quoted by continuation at 11. 10s., as has eachweller; various German marks have made 10½s. There has been a little more demand at Cologne at former rates. At Berlin, there has been no change. At Hamburg, stocks are restricted, but purchases with deliveries at a future date may be effected at a slight fall. The detailed revival noted of late in zinc is continued. On the Hamburg market, numerous orders for purchases have arrived from various districts, and could not be executed except at slightly higher rates. At Breslau, the article appears in a good position. At Paris the market has been quiet, in consequence of the favourable advices from abroad; rough Silesian has made 211. 12s. per ton.

**NEW GAS GENERATOR.**—Several apparatus have been from time to time contrived for the purpose of producing an inflammable gas by the admixture of common air with the vapour of hydrocarbon essences or oils; but a considerable amount of mechanical agency had to be resorted to in order to effect this admixture, until M. Mille's gas generator came into the field. This apparatus consists of several flat dish-like cylinders, placed one over the other, and held together by any convenient supports or framework. The upper cylinder is furnished with an open tube, fitted to its upper surface at one end, to admit the air to the liquid contained in the cylinders, and an exit pipe at the opposite end of the same surface conducts the air, when it has passed over the surface of the liquid in this cylinder, into the second receptacle immediately below it, where it passes over a second surface of evaporating fluid, and is thence conducted in like manner to the third cylinder, whence it flows to the burner by means of an ordinary gas-pipe. This admixture of common air and vapour being heavier than atmospheric air, descends by its own weight to the burner in the same way as the oil in old-fashioned lamps; consequently, all that is necessary to ensure a current of air inwards at the top of the apparatus, and a continuous flow of gas from the bottom cylinder, is to have the machine placed at a higher level than that of the burners it is intended to feed, and the more elevated this is the greater the downward pressure of the gas, and the more powerful the flame. Experiments made on a large scale in the workshops of M. Camille de Lavenant, 24, Rue de Chassignol, proved that a height of about 6 metres (19 feet) will suffice to enable the gas, spontaneously generated by the passage of the air, though circulating through a tube which has a slight inclination, several times bent horizontally and vertically, to attain considerable distance, and supply the burners on all sides of a vast atelier, with gas equal in brilliancy to the best street-gas, though the latter is supplied at a much higher pressure, the burners used being the same as those for ordinary coal gas, giving a clear flame, without smoke or any deposit of carbon, and without fouling or otherwise injuring the metal or India-rubber conduits, leading the gas through its self-acting circuit. These gas generators can be constructed of any size, the most convenient being from 9 inches to 3 feet diameter, according to the extent of the required illumination. The size for two or three lights, burning 5 cubic feet per hour each, is an apparatus with three cylinders each, 9 in. diameter and 1 in. high. The depth of the layer of liquid in each cylinder should not exceed ½ in. In general, whatever be the size of the generator, every kilogramme of liquid evaporated produces two cubic metres of inflammable gas; therefore, as a kilogramme is about 35 avoirdupois ounces, and a cubic metre is about 35 cubic English feet, an avoirdupois ounce of essence will make 2 cubic feet of gas. For this size of apparatus, holding 18 oz. of liquid in each cylinder, or 54 oz. in all, we have, then, 108 cubic feet of gas formed before the cylinder would be empty, and require the addition of more spirit. This would supply three lights, burning 5 cubic feet each per hour, for seven hours. For supplying large establishments, or several at once, Mille's gas apparatus of requisite calibre can be placed in the upper story of a house, and the gas be laid on as for ordinary coal gas, with this exception, that, as the pressure is exerted by the weight of a column of gas, the tubes for it should be slightly of larger diameter than those for coal gas; one or two gauze wire diaphragms should also be inserted in the tubes just before the burners, to prevent the possibility of the flame spreading to the conduits. The spirits or essences used should not be of higher specific gravity than 650, and should be as pure a hydrocarbon as possible; such as the light essences of petroleum, formed by the distillation of the raw oil, and of which it is absolutely necessary to deprive these, in order that they may be burned without danger in lamps with wicks. These essences contain no fatty acids, and are not used for any purpose in commerce, but as a substitute—and an inferior one too—for spirits of turpentine used in house painting, &c., so that to convert them into gas is the best use they can be put to. When the burners of Mille's gas generator are closed, as in the daytime, and the apparatus fall, even of spirit, no additional vapour is produced by the essences, beyond that which is already in the tubes, and with which the air therein is saturated. Thus, the gas remains stagnant in the tubes always ready to be lighted, and never by any possibility escaping about the premises, except through damage done to the apparatus. A homestead cheerily and safely illuminated with gas has hitherto been a luxury only attained by the more comfortable classes, but here we have a spontaneously-produced supply of gas, furnished by an apparatus which is unattended with the expense and encumbrance of gas-meters or mains, can never wear out, and is within the reach of the most humble cottager.

## AURIFEROUS QUARTZ MINING—No. IV.

BY THOMAS BELT.

The simple and economical methods that I have described will be found quite sufficient for extracting the gold from quartz and its associated minerals in the great majority of mines, and it is only in a very few exceptional cases that the extra treatment I have now to describe will be necessary, or will repay the cost of carrying it out.

When auriferous quartz veins contain iron pyrites (bisulphuret of iron) or mispickel (arsenical iron pyrites) they generally hold a portion of the gold concealed in their mass in an exceedingly minute state of division, but still existing as metallic gold. Particles of gold occur even in perfect crystals of mispickel and iron pyrites, and when these minerals are present in any quantity it is always necessary to ascertain by assay if there be not sufficient gold passing off in the pyrites, from the appliances for saving the free gold, to cover the expense of further treatment. Should this be the case, the pyrites ought to be separated from the quartz as completely as possible. The usual plan of separation used in gold mining is by means of blankets, but this is a very rude and imperfect process, a considerable portion of the pyrites passing off, and much rough quartz being left on the tables; and though from their very small first cost they may with advantage be used in the first instance for testing the value of the lode, yet if it has been proved that the pyrites passing off in the waste contains sufficient gold to pay for the extra treatment required, I would recommend that some more effectual mode be adopted for separating them. For this purpose the German percussion tables seem specially adapted, when the quartz has been broken up to a small and nearly uniform size by stamping. They were invented by Mr. Rittenger, and are now largely used in the imperial mines of Hungary. Very poor ores are dressed profitably by them, as after they are set properly they are perfectly self-acting. I have no doubt that they might be advantageously introduced into most dressing-floors.

When the pyrites have been separated from the quartz they ought to be roasted in a reverberatory furnace. By this means they are decomposed, the arsenic and sulphur being driven off, and the gold liberated. The peroxide of iron that remains has a much less specific gravity than the original minerals, and it easily crumbles to powder. The roasted mineral may now be passed into any rotating amalgamator, the most efficient being the Chilian mill and the arrastre, either of which may also be used with advantage when, from scarcity of fuel or other reasons, it is not advisable to roast the pyrites, as they grind the mineral to the finest powder, as well as amalgamate. With them the process of washing off the waste does not commence until amalgamation is completed, instead of being one continuous process, as in the amalgamators placed below the stamps, and there can no loss of gold result from reducing the material too fine; indeed, where the pyrites are treated without roasting it is necessary to grind them down to the finest powder to liberate the gold.

The Chilian mill consists of a pair of edge runners revolving in an iron pan, round which they move 12 times per minute. The outlet should be towards the centre, to prevent the mercury from being thrown out by the centrifugal force of the whirling water.

The arrastre differs from the Chilian mill only in the grinders being dragged round the pan instead of revolving. The method of using both is the same. About 100 lbs. of mercury is placed in the pan along with the charge of mineral to be amalgamated, and only sufficient water added at first to form it into a loose paste, amongst which the mercury is mixed up by the grinders. After sufficient time has elapsed for grinding and amalgamation a small stream of water is turned on, the outlet opened, and the waste gently washed away, whilst the mercury and amalgam sink to the bottom of the pan. Another charge is then added, and the same process repeated, and this is continued without changing the mercury, which need not be renewed until it is sufficiently enriched with gold.

Experience has shown that the Chilian mills, with flat-faced runners, are better than those made with convex faces, but one of the most efficient forms of arrastre introduced into Australia was with the grinders made convex at the bottom, with a groove in the centre and a concave bottomed pan. Besides being the best machines for treating the concentrated pyrites, the Chilian mill and the arrastre may be used for grinding down and amalgamating small quantities of picked rich quartz, or for testing samples.

I must, for lack of time, leave the description of the method of testing the waste products to another paper.

## REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

MARCH 16.—There is very little new to be said on the question of the Lock-Out, though columns are being printed about it daily. Two suggestions have been put forth, with a view of terminating the Strike. One comes from some of the masters, and is that 100 puddlers from other districts should go down to North Staffordshire and commence work at the wages accepted in the other districts. This the men generally appear to regard as impracticable, as likely to lead to great heart-burnings, to contentions, and perhaps to violence. A second proposition was made at the meeting of the Millmen's Association, at West Bromwich, on Monday, which was that the masters in the other districts should supply puddled iron to North Staffordshire. The objection made to that is that it was tried in South Staffordshire when there were partial strikes at works in various parts of the district, and that it was not found to work satisfactorily, and that the difficulties would be greater in the case of one or more districts supplying others. The suggestion is, however, worthy of consideration. Perhaps the North Staffordshire ironmasters would not condescend to accept pecuniary aid in other shape from the other ironmasters, else it might be agreed to sell these bars at the regular market price, and that the Ironmasters' Association should pay the carriage, or a part of the carriage, to North Staffordshire, out of a common fund of a maximum quantity for each works in North Staffordshire, so as to admit of the works there being put in operation, then the necessity for the lock-out in other districts would cease, as this policy, if effectually carried out, would render the struggle on the part of the North Staffordshire men hopeless.

The writer of this letter has long anticipated, and as the consequence of the national organisation of the men, a desperate and vast struggle such as the present; but he is as strongly opposed to lock-outs as to strikes, and has never, despite the assertion at the Trades Union meeting at the Sussex Hotel, Fleet-street, yesterday—that the *Mining Journal* is the organ of the masters—endorsed the view that the lock-out should only be terminated on the North Staffordshire puddlers resuming work, and any suggestion which affords a fair opening for a solution of the question on any other than these extreme terms ought to be well considered before it is rejected.

The meeting above referred to is by no means satisfactory. Any one who knows the facts must acknowledge that Mr. Potter's speech was most unfair in almost every important particular. He stated that the men believed that the object of the masters was to put down the men's combinations, but this was wrong; and if the masters do intend anything of the sort, they are entering on a hopeless and, therefore, a foolish course; but Mr. Potter adds—"The *Times* of that day had stated that the men had brought this combination of the masters into existence—that they were the originators of combination; but he believed it could be proved that the



asters had had their secret combinations before the men adopted that principle." Now, there is in every question a basis of fact, whatever may be the opinions deduced from them; and it is unquestionable that the masters in different districts never combined until this last reduction, whilst the national organisation of the men has existed since early in 1864. The proof of the absence of any secret organisation for mutual help on the part of the masters is to be found in the fact, that during the South Staffordshire strike in 1863, and the Leeds strike, no assistance was in any shape rendered by the other districts who reaped the advantage of those struggles by obtaining more orders.

Again, as to the cause of the reduction, Mr. Potter represents that the resistance by the North Staffordshire men sprung from their own wishes, whereas it is now confessed—a letter of Mr. Kane's, President of the Gateshead Executive, having revealed it—that the strike in North Staffordshire was counselled by the Brierley Hill Executive, though it was represented in the newspapers to be the act of the North Staffordshire men. It is this which makes the rupture so difficult to heal. The masters say—"You deliberately and secretly adopted the policy of fighting the battle in one district so as to overcome first there, and afterwards in all; and when we combined to resist that policy you repudiated the advice you first offered to the North Staffordshire men, and withheld the help you promised them; but they do not now obey your behests, and they do receive aid from some source, and how can we accept your professions, that you have now repudiated the policy you then adopted, when your are confessedly powerless to counteract the policy you deliberately instigated?" It was in the attempt to make all the ironworkers in England obey the dictates of one body that the counter association of masters was first brought into existence, and by the underhand policy which the executive adopted as to North Staffordshire that the difficulty of healing the breach was vastly increased, as the masters had no longer confidence in the resolutions of the Unions.

The interview between the masters and representatives of the Gateshead Union, at Newcastle-on-Tyne, yesterday, was of a hopeful character, and the meeting at York, to-morrow, at which deputations from the South Staffordshire and North Staffordshire masters will be present, may possibly offer some solution to the present dead-lock. All who look on this struggle in the public interest alone, unconnected with the men and masters, must deprecate a disposition on either side to accept of no conclusion but the unconditional defeat of the opposite side.

The readers of the *Mining Journal* will remember a terrible accident, on Nov. 16 last, at the Withymore Colliery, near Dudley, of Messrs. E. and J. Nock, by which the breaking of a winding-chain led to the loss of eight lives. Four persons—the active proprietor, Mr. Nock; the engineer, Francis Downing; the doggy, Zachariah Mason; and another man, whose commitment was evidently the result of misapprehension—were committed for trial by three separate coroners' juries on the charge of manslaughter. At the present assizes for this county, the proprietor and the engineer have been tried, and both acquitted. At previous assizes it has been too frequently the case that charges of this nature have been slurred over, but this has not been so in this instance. Mr. Baron Pigott, who presided, has conducted the investigation with the greatest possible care, and though no one has been convicted the trials cannot fail to impress all connected with colliery operations with the solemn responsibility attaching to them to exercise a watchful supervision over the machinery and operations on which human life depends.

#### REPORT FROM DERBYSHIRE, YORKSHIRE, AND LANCASHIRE.

MARCH 16.—The all-absorbing topic of conversation is the great Lock-out in the Iron Trade—the struggle of labour against capital. The result of this great event is not attempted to be guessed at, but it is feared that it will be attended with disastrous consequences. The latest reports from North Staffordshire are that the men will appeal to the general public for support, and that they will not return to work until compelled by sheer want. The masters, on the other hand, are equally determined to keep their works closed, in order to deprive the North Staffordshire men from receiving support, and thus the struggle has become desperate. There are many firms in these counties who have not given in their names to adhere to the resolution of the Northern masters, and these works are now in operation. The men at nearly all the works in these counties who are locked out are willing to adopt the reduced scale; but, owing to the masters having subscribed to the lock-out resolution, are prevented honourably from permitting their works to be opened until the dispute is settled. There is great disorder among the Union executive, and it is stated that a fortnight will absorb nearly the whole funds in hand if the locked out are to receive their 10s. per week. Credit is being limited, and the ultimatum will be, so far as at present can be seen, a victory for the masters. Considering the confused state of the trade, owing to the lock-out, there is more business being transacted than would be supposed, and it is the opinion of those best informed on the subject that had it not been for the lock-out the price of iron would have suffered a further reduction, owing to the overstocking of the market. A very eminent Derbyshire firm have offered to take their men into North Staffordshire at their own expense, in order to supply labour to that district; but the proposition, liberal as it was, has not been accepted. The offer was also accompanied with a promise that measures should be taken to prevent the men being intimidated.

The Coke Trade is duller, owing to the lock-out, and the demand for coal has diminished from the same cause, but the consumption for other manufacturing purposes continues to increase, especially for distant markets. Though we have had a large quantity of rolling stock manufactured by private companies there is still an outcry for railway wagons; and many coal proprietors, especially in Yorkshire, are greatly inconvenienced thereby. The demand for the hard steam coal of Derbyshire continues to increase, and it is with difficulty that the supply can be made to meet the demand.

All the companies recently formed in Derbyshire and South Yorkshire under the Limited Liability Act are doing well, and the union of interests appears to have been productive of much good. Several companies are deferring their declaration of a dividend until they have been in operation a few months. There was a meeting on Wednesday of the firm of John Brown and Co. (Limited), the Atlas Steel Spring and Iron Works, a firm celebrated for the manufacture of armour-plates. Mr. Brown, the late principal partner, occupied the chair, and stated that the meeting had been called formally, in compliance with the Act. The stock had not been taken, nor any balance-sheet struck. The valuation had been made without a single question of difference having arisen, and they had been handed over to the new company, and the amount credited to John Brown and Co. The general meeting was agreed to be held on May 24. The directors and auditors for the ensuing year were elected, and a vote of confidence in the directors and managers was accorded. It was shown that the business operations of the firm had considerably increased, and that a very satisfactory dividend would be declared at the general meeting. After the meeting had terminated the shareholders made a tour of inspection of the works, with which they were highly pleased.

The Sheepbridge Iron and Coal Co. will declare a dividend next June. The Midland Railway Company have, it is rumoured, purchased the rolling-stock and rails on the works of the Staveley Iron and Coal Company, and they will in future work the shafts. It is reported that this important item in the company's property was not sold to them by the late Mr. Richard Barrow, but was let at a certain rental, and that the property has now been transferred to the Midland Company. It is further stated that the company will make further railway provision on the works.

Great progress is being made with the colliery works at Pilsley, belonging to the Clay Cross Company, and also with the Shirland Colliery, near Alfreton, and it is anticipated that these works will be in full operation during the present summer. A great number of new cottages, estimated at between 200 and 300, are about to be erected for the accommodation of the different workmen who will be employed at the collieries.

The failure of the Birmingham Bank of Messrs. Attwoods and Co., has had a depressing influence on our local bank-stock here, and has resulted in many withdrawals. There are an unusual number of shares on sale, not only by private sales, but some are offered by public auction.

BARNLEY, MARCH 17.—The men at the principal iron establishments in the district are now in full work, having agreed not to support their brethren on strike in Staffordshire. Trade is good in consequence of so many firms having closed, and in some places, such as Milton and Elsear, orders are so numerous that with those already in hand the men will be fully employed for months to come. The contest between the men and their employers is watched with keen interest by all parties connected with the coal and iron trades, but as yet no expression of feeling has taken place. The Coal Trade of the district is moderately good, but by no means equal to what it was in the early part of the year. There is not so much doing in coke, and at some of our largest barrens many of the ovens are out. The decision of the House of Commons on Tuesday, showing out the Lancashire and Yorkshire and Great Eastern Junction Railway Bill, has excited the greatest dissatisfaction amongst our colliery proprietors, and all who are at all interested in the coal trade of the district. By that proceeding the huge monopoly of the Great Northern Company is to be perpetuated, and the public taxed to increase its dividends. In London, which consumes nearly one-tenth of the coal raised in the kingdom, it will be seriously felt, as it would have made a difference of from 3s. to 4s. per ton in favour of the retail buyer; at the same time the coal would be put down in the very heart of the city, thus saving the price of carting. As the cost of carriage by the proposed line would have been 4s. per ton—or 1s. 4d. less than the Great Northern—it will be easily seen that the public are the heavy

losers. To the South Yorkshire district the decision proves with great severity, as it prohibits the development of its mineral wealth, and compels our coalmasters to raise coal to suit the ability of the Great Northern to carry. Only a short time since several of our collieries had to play a day or two in consequence of the locomotive power of the company being required to assist the ordinary traffic, and such no doubt will be the case again, so that our colliery owners are left powerless, and they as well as their workmen are the sufferers. A short time previous to his death, Mr. Joseph Locke, the eminent engineer, said that the South Yorkshire coal trade was only in its infancy, and, judging from the legislation of Tuesday last, it will remain so for the benefit of the Great Northern Railway Company. With two lines of railway to London an impetus would have been given to the trade of the district such as it had never known. The capitalist would have found a fine field for investment, and there would have been a good market for labour. Still the matter cannot remain as it is, and there can be no doubt the breaking down of the monopoly is only a question of time.

#### REPORT FROM MONMOUTH AND SOUTH WALES.

MARCH 16.—Up to the commencement of last week no material change took place in the Iron Trade of this district, consequent upon the Staffordshire lock-out, and although some predicted that there would immediately be a large accession of orders, yet there was no indication of this being the case. About the close of the week, however, buyers began to realise the importance of the lock-out, and then they commenced to give out their orders more freely. The result has been, as might naturally be expected, that makers are firmer in their demands as regards prices, and there is hardly a work in the district where the specifications in hand are not amply sufficient to keep the men in regular employ for a considerable time to come. It is still believed in South Wales that the lock-out will not last long, and that, unless the men yield voluntarily, they will ultimately be obliged to give way, owing to their supplies from the societies being stopped. The steam coal proprietors are full of business, and the house coal collieries are in active employ. Coke shows no change, and patent fuel is in average demand on export account.

The Ebbw Vale Company (Limited) are gradually extending their already large works, and another new mill has just been started at Ebbw Vale, which, when in full operation, will employ a considerable number of additional hands. This is the third mill which has been opened within a very short period of time.

The directors of the Aberaman Company (Limited) have not yet had possession of the works, and reports have been circulated during the last few days to the effect that there is every likelihood of Mr. Bailey returning the money paid to him, and the company will then, as a natural result, cease to exist.

At the Monmouthshire Railway and Canal Company half-yearly meeting, on Wednesday, Mr. Crawshaw Bailey, M.P. (the Chairman), congratulated the proprietors on being able to keep up their dividends, and incur such a large outlay in relaying. Mr. Cartwright said he perceived that, although they had an increased traffic, yet the percentage of working expenses had not decreased, as was usual when traffic increased. He questioned the advisability of purchasing the Brecon Canal, when their own canal was such a great loss to them. He found that the cost of relaying had been much heavier than the estimate of the Chairman and Mr. Thomas Brown at previous meetings, and the opinion he then expressed was being gradually verified. He trusted the directors would oppose the Ebbw Valley and Cardiff Junction scheme; and after some further remarks, concluded by endorsing the adoption of the report. Mr. Batchelor asked what had been the result of the negotiations with the Sirhowy Company. He understood that the directors could prevent the Ebbw Valley and Cardiff scheme being carried out, if they only dealt liberally with two or three of their largest freighters. The Chairman replied that they proposed to purchase the Brecon Canal in order to avoid a serious difficulty as to the tonnage rates. An offer had been made to work the Sirhowy at 50 per cent. of the gross receipts, but the offer was declined. Mr. Thomas Brown stated that the offer to the Sirhowy was a most liberal one, taking all the circumstances into consideration. In the matter of the Brecon Canal, the Chairman had acted in the most handsome manner, for if he had stood upon his rights he might have put a large sum of money yearly in his pocket. Mr. Lyne, Mr. Davis, Mr. Lawrence, and Mr. Llewellyn having offered some observations, the report was adopted, and a dividend at the rate of 6½ per cent. per annum was declared for the half year.

The proposed amalgamation of the Vale of Neath with the Great Western is looked upon with great distrust at Swansea, and the Harbour Trust and other public bodies are taking steps with the view of opposing the bill in Parliament, in so far as to secure to the London and North-Western and other companies running powers to the port. Before the opening of the Swansea and Neath section of the Vale of Neath the Great Western had the control of the coal drops at Swansea, and the unsatisfactory way in which the traffic was then managed has much to do with the present opposition, for the freighters are naturally afraid that once the Vale of Neath is in the hands of the Great Western the same causes of dissatisfaction will prevail.

TRADE OF THE SOUTH WALES PORTS.—The returns of the trade of the several ports of South Wales for the month of February have just appeared. The exports of coal were as follows:—

	Feb. 1865.	Feb. 1864.
Cardiff .....	Tons 124,707	Tons 138,774
Newport .....	22,891	21,335
Swansea .....	44,880	46,471
Llanelli .....	11,490	8,255
Coastwise the shipment were as follows:—	Feb. 1865.	Feb. 1864.
Cardiff .....	Tons 67,436	69,043
Newport .....	51,387	48,003
Swansea .....	16,755	23,237
Llanelli .....	11,219	17,320

At above returns show a slight falling off at all the ports, with the exception of Newport. Cardiff exports fell off nearly 14,000 tons, owing mainly to the competition of other ports, more especially Newport, for the Abardare coal traffic. The large quantity of steam coal sent off late to Bristol and the shipping facilities to the metropolis and other large markets are improved, it is expected that there will be a gradual increase in the quantity sent inland. Newport exported 2403 tons of iron, being a decrease of nearly 2000 tons as compared with January, and Cardiff 8318 tons, as compared with 7027 tons in the previous month.

The general meeting of the members of the South Wales Institute of Engineers will be held in the Assembly Room of the Castle Hotel, Merthyr Tydfil, on Wednesday, when the following papers, read at the last meeting, will be discussed:—Mr. W. B. Monks's, "On Utilising Pit Tips"; Mr. J. J. Bodmer's, "On the Nature and Manufacture of the Stone Bricks"; Mr. A. Bassett's, "On the Port of Cardiff, and the Aberdare Coal Field"; Mr. G. Barry's, "On the Utilisation of Blast-furnace Slag." And the following papers will be read and discussed:—"On the Caerphilly Mineral District," by Mr. T. Foster Brown; "On Tunnelling of Shafts," by Mr. Edward Hadley; "On a New Mining, Colonial, and Land Surveying Theodolite, with Travelling Stand," by Mr. H. D. Hookhold.

DUBLIN INTERNATIONAL EXHIBITION.—His Royal Highness the Prince of Wales has announced his intention of opening the Exhibition on May 9. The different foreign advances already received by the Executive Committee show that much progress is making to obtain interesting exhibits. In Canada, on the recommendation of Lord Monck, the Legislature has voted 1000l. for forming a small collection of articles. It is to include ores of copper and other metals; specimens of gold, silver, soapstone, chrome, iron, and serpentine marbles; samples of glass, hops, fax, maple, sugar, and honey; sets of wood prepared for study or cabinet collections most useful in the arts, cabinet manufactures, &c.; articles of woollen manufacture, yarn and cloth, prepared skins and saddlery, implements, models, sets of newspapers and periodicals. A committee has also been formed in Sherbrooke, for forwarding a collection from the eastern townships of the province, on which Prof. Miles, Lord Aylmer, Dr. Gilbert, and about a dozen other influential gentlemen, are acting.

PURIFYING COAL GAS.—The object of the invention provisionally specified by Mr. John Phillips, of Hulton, near Leeds, is—firstly, to purify coal gas; and, secondly, to improve that particular kind of manure known as bone manure, by utilising a gas which is the essence of all manure, and which in the manufacture of coal gas is frequently suffered to escape. This gas is ammonia. It is well known that it is usual to purify coal gas by the means of a lime filter. This time absorbs ammoniacal gas, which, on exposure to the atmosphere, is wasted, and the lime itself after use is completely exhausted. Mr. Phillips's invention consists in using bones in any desired condition as a filter for the coal gas, and such bones absorbing ammoniacal gas; he fixes such gas by pouring on the bones sulphuric acid, which has a chemical affinity for the ammonia; or other acids may be used (having such affinity) to fix the same. He thus obtains a valuable compound manure, and by filtering the coal gas through bones he renders it much purer.

DUTY OF THE CORNISH ENGINES.—In the year 1811 Mr. Joel Leag began to report the performance of the Cornish engines, and during that year, it is said, issued his first engine report. In the year 1827 an eminent engineer, Capt. Samuel Grose, commenced to improve the duty of steam-engines at Great Wheal Towan. It is believed that practical experience has done more than scientific researches in procuring the high economy of fuel, which has been the result, and that this has been principally effected by the use of high-pressure steam expansively employed, and using Mr. Trevithick's boilers, and clothing the steam-pipes and cylinders with a non-conducting material, together with great attention of the engineers to the fires, so as to make the best of every bushel of coals consumed, as some engineers are now doing on the railways. The following table shows the periodical increase and decrease of duty from 1813 to 1856:—

	Approximate number of engines reported.	Average duty of the whole for 1 bushel of coals of 94 lbs.	Average duty of the best engines for 1 bushel of coals of 94 lbs.
1813 .....	24	19,456,000	26,400,000
1823 .....	45	28,166,162	42,122,000
1833 .....	67	46,142,466	63,306,100
1843 .....	61	48,700,000	84,200,000
1848 .....	36	60,000,000	96,100,000
1856 .....	27	53,160,600	—
1856 .....	24	47,000,000	—

It is to be deeply regretted that the duty of our steam-engines is decreasing, and that many of the important lessons taught by Capt. Grose appear to be forgotten; whilst we are brought familiar with the rapid improvements of locomotive and marine engines, we have to deplore a retrograding movement of the stationary engines in our Cornish mines. With the present low price of minerals, and very heavy calls on reduced dividends, we certainly ought to try to bring up the duty of our steam-engines to where it was in 1843. The number of pumping-engines reported for Jan. is 37. They have consumed 3846

tons of coal, and lifted 22.8 million tons of water 10 fms. high. The average duty of the whole is, therefore, 52,800,000 lbs. lifted 1 ft. high, by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

	Millions
Boscawen—70 in. .....	68.9
Cargill Mines—Michell's 72 in. ....	64.1
Cook's Kitchen—80 in. ....	54.4
Grange—70 in. ....	54.1
Great Wheel Barrow—Harvey's 85 in. ....	66.2
Great Work—Leeds' 60 in. ....	61.6
North Wheel Croft—Trevelyan's 50 in. ....	62.3
South Wheel Franks—Marriott's 75 in. ....	62.3
Treloar—60 in. ....	67.4
West Caradon—Elliot's 50 in. ....	65.6
Wheal Ludcott—Willcocks' 60 in. ....	68.2
Wheal Margery—Wesley's 45 in. ....	62.1
Wheal Seton—Tilly's 70 in. ....	70.0

BLAST-FURNACES.—Mr. Morgan Morgans, of Brendon Hills, Somerset, has patented an invention, which consists in constructing blast-furnaces with a central core, by preference conical, and extending upwards to any desired height in the furnace. He inserts tuyeres pointing inwards to the furnace in the cone when made hollow, and is thus enabled to introduce, when required, a blast through the core in addition to the ordinary blast. In some cases the whole blast may be driven through the central core. Or the core may be made solid, and then the blast may be introduced in the ordinary manner.

#### MINING IN AUSTRALASIA—MONTHLY SUMMARY.

ADELAIDE, JAN. 26.—Galvanised iron is rather depressed, in consequence of several lots of damaged being pushed off at auction at low prices. Fencing wire has a downward tendency. Bar and plate iron remain much the same. The strike amongst the smelters at York's Peninsula continues, and, in consequence, the Wallaroo Company have no copper for sale. The Barra Company have reduced their price to 90l. per ton at the port. Coals continue much the same, although we have had some heavy arrivals from Newcastle, N.S.W. In chemicals, soda crystals is the only article in fair demand, and a small shipment has been disposed of at 10l. per ton, to arrive. Tars and oil are dull of sale. There is no enquiry for carbonate of soda.

MELBOURNE, JAN. 25.—For some years past a belief had existed that leads of gold were to be found underlying Melbourne and its suburbs, and it was thought that in the ancient bed of the Yarra-Yarra, which now flows through a somewhat different course, would be found deposits of the precious metal. About four years ago Mr. G. F. Nicholls, a practical and scientific Ballarat miner, in traversing the suburbs of Melbourne, was struck by the very strong geological resemblance which certain parts bore to the famous deep leads at Ballarat, the ancient bed of the Yarra-Yarra River. So strongly was Mr. Nicholls impressed with this fact, that he lectured and wrote on the subject, and asked the Government to test the question. The matter, however, slept for a couple of years, until, traces of gold having been found in carting gravel from Studley Park, a company was formed in Collingwood to thoroughly test the matter. A shaft was sunk in Collingwood, which is the principal suburb of the metropolis of Victoria. A few days since the shaft was bottomed, and as much as half a pennyweight of gold to the bucket was washed out. It is believed that the true bottom on the bed rock has not yet been reached. The matter will, however, be fully tried, as arrangements are being made to put down shafts in other localities.

The residue of the mining intelligence is very cheering. Further deep leads are in course of development at More's Creek, Malmesbury, Dunsford, and Dunolly while the new gold reefs reported from day to day from the neighbourhood of the Crooked River, in Gipps Land, almost perplex the chronicler when endeavouring to keep a record of them. The great companies of Ballarat have been yielding very largely for a long time past, and from their large quantities of gutter must continue to yield largely for many years to come. The Ballarat Band of Hope Company, a 450 feet deep lead, has yielded during the last five weeks the following quantities of gold—1145 ozs., 1374 ozs., 1217 ozs., 1219 ozs., and 1115 ozs.; and the manager of the mine says this quantity must be greatly increased when the company can get a steady stream of water, as the present workings are merely from a single shaft. He also reports that they can see some fifteen years' work before them. The Great Extended and the Koh-i-noor Companies, in the same neighbourhood, have also been raising prodigious quantities of gold, the latter company having obtained during the past year no less than 114,678 ozs., which, at 4l. per ounce, gives only some 50,000l. short of half a million of money.

#### AUSTRALIAN MINES.

KAPUNDA.—The quantity of ores raised in Nov. was 225 tons, of 194 per cent. average produce, equal to 48½ tons of pure copper, exclusive of 145 tons of sulphur ores for flux. The quantity raised in December was estimated at about 250 tons. Since the date of the last advice 63 tons of copper had been shipped.

YUDANANUTANA COPPER.—The superintendent (Adelaide, Jan. 19) states—I enclose bills of lading for copper and ore shipped per *City of Adelaide*. The negotiations with the Messrs. Cobb having fallen through I have entered into a contract for 12 months with Mr. Frost, of this city, for the cartage of copper and ore, by horse teams from the Blinman Mine, at 6l. per ton; and this morning I have also entered into another contract with Mr. Workshop, to cart between Port Augusta and the Yuda mines. These arrangements are very favourable to the company, as we can now depend upon regularity, as well as a much quicker transit. Four of the teams started on the 17th inst. for the Blinman Mine, taking with them the fire-bricks and clay, and they will return with copper and ore. As I think that our difficulties are now overcome, I am making arrangements to put on more men at both mines.—Capt. Anthony (Jan. 21) reports—Blinman Mine. The men employed last month, preparing No. 2 shaft, below the 20 fathom level, have completed those preparatory works, and are now working below the shaft. The lode here is regular and well defined, but poor. The Big Bend is now full of ore, and must remain so until the horse-whims are ready to draw it to the surface. The 10 fathom level, south of the Big Bend, is also full of ore. The men are taking away ore from the mouth of No. 4 shaft. Two double-action jiggling-machines are at work, and doing well; a third is being made. I have about 12 tons of copper, of from 90 to 95 per cent., about 100 tons of ore of from 25 to 35 per cent., ready to send away, and a good stock of smelting ore dressed for the furnaces. The smelting-furnaces are idle for want of fire-bricks for the bottoms.

WORTHING.—Bremer Mine, Jan. 26: The mine has considerably improved since the last advice. The percentage of ore at the 63 had considerably increased, and some of it had assayed 31 per cent.; the average was 18 per cent. The lode was composed of rich yellow sulphuret, peach, prun, and very little mudstone. The water had been let down from the 53, and there was a large increase of reserve of good ore between that and the 63, in which winzes were being sunk. The quality of ore at the 63, and at Boundy's lode, had considerably improved: 65 tons of good regulus had been delivered to the English and Australian Copper Company, averaging 50 per cent. The month's expenses had been 2152l.; ore dressed about 300 tons; hands employed 15l. There were about 300 tons of ore on hand, and 10 tons of regulus, besides a large quantity of smelting ore. The setting manager draws particular attention to the improvement of the ore, which he expects will increase the returns of the mine 50 per cent., at about the same cost.

YORK PENINSULA.—Captain Warrington reports from the Kurilla Mine:—"The engine-shaft sinking on the underlie of the lode, down about 6 ft. below the 25, and giving occasional good stones of ore in the bottom. Price for sinking 30l. per fm. The lode in the 25, going east from engine-shaft, again improving, good ore making in the lode, in sufficient quantities to save. Price for driving 10l. per fm. The lode in the 25 west is poor and unchanged since last report. Price 10l. 10s. per fathom. The lode in the 15, going east from engine-shaft, also improved, being from 6 to 9 in. wide, very solid grey and yellow ore. We are saving all the ore; cost for driving 10l. per fm. On the whole, I am much more pleased and satisfied with the appearance of this mine than at this date last month. The first 5 tons of ore raised by the company from the mine, averaging fully 20 per cent. for copper, were in course of shipment, per *Clara Novello*, for London."

ENGLISH AND AUSTRALIAN COPPER.—There were four furnaces and two refineries at work at Port Adelaide, and four furnaces at Kooronga. Since the date of last advice a further shipment of 50 tons copper had been made.

PORT PHILIP AND COLONIAL GOLD.—The quantity of quartz crushed during December was 4754 tons, yielding 4111 ozs. 10 dwts. 12 grs. of gold, or an average of 6 dwts. 4 grs. per ton. The total receipts for the same period were 2277l. 6s. 7d.; payments, 1954l. 17s. 8d.; profit, 2622l. 2s. 11d. This return shows an increase of quartz crushed per week of 91 tons, but a considerable reduction in yield, amounting to nearly 2 dwts. per ton. The receipts include 4111 lbs. 11d. on account of pyrites, being proceeds of gold produced from materials purchased, as well as profit and repayment of expenses incurred in operating on that saved at the establishment. The payments include some extra, such as purchase of new stone-breaking machinery, 348l. 15s. 7d.; insurance (Clune's plant), 109l. 1s. 6d.; purchase of pyrites, 357l. 4s. 10d.; and drawn, 200l. Quartz crushed in January, 3409½ tons; yield, 1039 ozs. 19 dwts. or 6 dwts. 2 grs. per ton. The first fortnight the yield was poor, but during the third week it fell off so much that I had to reconstitute with the Clunes Company; and, but that the new agreement was so nearly completed, I should have terminated the temporary arrangement made for the division of the gold. The reason for the falling off in the yield is that proper proportion of good quartz is not sent down with the inferior materials. That days since a small quantity of quartz from the eastern vein in the 300 feet level, that is well in August last, was sent down, and was at once perceptible in the improved yield of the blanket amalgam. I hope we shall be able gradually to prevent all this irregularity in the yield when the mine is in our own hands.

SCOTTISH AUSTRALIAN.—The superintendent at Sydney (Jan. 20) reports from Lambton Colliery:—"The coal throughout the whole of the working face maintains its original good character. During the slack month of December the coal sales and shipments amounted to 6577 tons.

CADIAGULLONG COPPER.—During the month there were raised 136 tons of ore, of a percentage ranging from 5 to 26, average 10½, yielding on assay 14½ tons of fine copper. The various stopes, drives, and shafts all continue moderately productive. Capt. Holman reports that the ore raised during the month have for the most part been coarse, and that "in addition to the quantity sampled a very large lot has been selected and set aside for crushing. Phillips's shaft has been deepened 3 fathoms 6 in., and is let to four men, at 10l. per fm. The lode is now on the point of changing from carbonates to black ores, and of the latter there are now two small branches, together yielding 1 ton per fm. The picked carbonates yielded 25½ per cent. Next week I hope to select a site for the erection of our 25-in. cylinder-engine, adapted for pumping, winding, crushing, and sawing."—Smelting Works: Since last report 36½ tons of fine copper have been dispatched from the works to Sydney. By the end of the month about 19 tons more were expected to arrive in Sydney from the works.

WHEAL ELLEN.—Capt. Barker, Jan. 25: The cross-cut at the 50, at Square's engine-shaft, measured on survey-day 2 fms. 1 ft. 5 in.; after driving 5 ft. further the lode was discovered, in all 4 fms. east of the shaft underlying 6 feet in the fathom. We have cut through the lode, and turned the end north; it is a strong, coarse lode, worth 5 tons per fm., and varying in quality from 6 to 10 per cent., with every prospect of improvement in quality as we proceed north. The weight of the pig-lead assayed is 3 tons 0 cwt. 2 qrs. 7 lbs. Assay for silver, 260 ozs. 17 dwts. 17 grs.

FORTUNE COPPER.—Capt. Penberthy (Fremantle, Dec. 29) reports:—"The new engine-shaft is sunk 6 fms. 2 ft. below the 40, and is set this month to eight men to sink at 15l. per fm.; the lode at this point is 18 in. wide, composed of lime, spar, with a little copper ore. The run of copper ore, 20 in. wide, and worth fully 40l. per fathom, which I reported last month, has just left the shaft in a north-easterly direction, and shall only reach it at the 80, which point I expect to get about the beginning of Feb. The stopes in the back of the 40, south-west of shaft, working by four men, at 10l. per fm., are well in August last, was sent down, and was at once perceptible in the improved yield of the blanket amalgam. I hope we shall be able gradually to prevent all this irregularity in the yield when the mine is in our own hands. 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bottom and 1 ton grey and green carbonate of copper ore per fm. In section 436 we have cut two new lodges, situated in a good stratum of ground; they are from 2 to 3 ft. wide. We purpose tracing the lodges to a point where I think they will form an intersection. We have been tracing the lodges in the consequence of the ties and dressing apparatus being removed and fixed on the new dressing-floors, which are in first-rate working trim. The crusher was fixed and got to work on the 14th inst., which will effect a saving in the dressing of ore of about 7s. per ton. We have dressed this month 15 tons of copper ore and 21 tons lead ore of good quality.

# FOREIGN MINES.

ALLEN AND QUENANGEN MINES.—Estimated produce for Jan.:			
Mines.	Ore.	Per cent.	Copper.
Quenangen .....	94	6 1/2	5.87
Kalpa .....	16	5	0.80
Old Mine .....	120	4 1/2	5.70
United Mines .....	12	4	0.48
Total .....	242		12.85

The produce for the last month is rather below what we expected but we believe the falling off will be only temporary, whilst our general prospects are far more encouraging than at any period during the last three years.—C. TRELLE.

**THE NOVA SCOTIA LAND AND GOLD CRUSHING AND AMALGAMATING COMPANY** have advised of a remittance of 18 ozs. 4 dwts. 18 grs. of gold. From Oldham the agent writes:—"Our operations have progressed favourably, but with much smaller results than I had anticipated, judging from the appearance of the quartz near surface, as well as the result obtained from the crushing."

**CENTRAL AMERICAN.—Altopeque, Feb. 1:** At the San Pantaleon Mine the workings are proceeding as usual. At the San Carlos Mine the returns for January are above the calculation. Our returns for Jan., 1865, from the two mines have been 45 tons 10 cwt., at an average assay of 87.43 ozs. of silver per ton of ore, equal to 3950 ozs. of silver. Ores sent to the hacienda de San Jose in the past month are from San Pantaleon Mine 1 ton 8 cwt. 2 grs., and from San Carlos 32 tons 9 cwt. 2 grs., making a total of 33 tons 18 cwt. The superintendent refers to the satisfactory and steady progress in San Carlos. The ore returns have exceeded the estimate, which is due to the increase at San Carlos. The average assay has improved also. The returns from San Pantaleon, 11 tons 7 cwt., at 49 ozs. per ton—556 ozs.; San Carlos, 32 tons 9 cwt., at 101 ozs. per ton—3247 ozs.; total, 43 tons 10 cwt., yielding 3803 ozs. of silver. The returns of the back continue their usual produce, and we may, therefore, confidently expect increased returns from this mine. As Jan's winza is now holed to the deep adit (La Esperanza), the latter will be rapidly advanced under the ore ground towards the new one. The 25th conducta, consisting of 17 bars of silver, were dispatched to the Guatemala Mint on Jan. 6, which realised \$13,607 3/4.

# THE DYLLIFE MINING DISTRICT, NORTH WALES.—No. II.

Last week we introduced our readers to this very prolific lead mining district, and we now proceed to show something of its configuration and geological condition. The ground rises for some miles gradually eastward from Machynlleth, situated on the River Dovey (and into which town the tidal wave reaches), for a distance of five or six miles, where the country becomes mountainous, and the road quickly attains a height of 1000 feet above the surrounding valleys; the valleys run more or less at right angles to the line of mountains, and parallel with the ridges. The whole of the rock is clay-slate, and runs from Dinas Mowddwy southward, in unchanged geological condition, until it meets the Red Sandstone of Breconshire. The veins or lead lodes, which also contain a considerable quantity of silver, and a less considerable amount of copper ore, cross these hills on an average, with about a mile of intervening rock; and as there are about 40 miles of country on this line from north to south, we may roughly estimate that there are about 40 lead veins passing through, or rather across, it in that distance. But we have here the feature of the case to take into account, as the bearing ground on each of these lodes cannot be less than six or seven miles, and mines are seldom more than one mile long; we may possibly in time see developed in this rich rock some 250 to 300 mines; the mines already opened on it are wonderfully rich in metal, and the Dyllife Mine alone is said to be making a profit of 20,000l. a year. It has been found that throughout the whole of the Cardiganshire slate the utmost order prevails with reference to the formation of the metals. There is evidently a law regulating the whole matter upon clear and certain principles. The ore ground is formed in belts, and as the belt of rock strikes every vein, it renders it productive. The constitution of the rock within the edges or boundaries of the productive belt is not visibly different from the surrounding strata, but its influence is of the most marked description. The line of these belts is nearly magnetic north and south, or a few degrees (say 6°) to the west of north, constituting a sure guide to the investor or miner in the selection of the ground. In South Dyllife the proprietors have done well to go on the lode situated in the magnetic meridian, opposite the Great Dyllife, and the judiciousness of the course has already borne fruit in the discovery of a productive back in the selected vein and situation. There can be just as little doubt but that, in tracing this evidence downward, it will eventually in the realisation of a body of metal similar in its formation and similar in its results to those so fortunately prevailing in the neighbourhood, or rather adjoining, mine of the Great Dyllife, the profits of which are too well known to require reiteration.

# SOUTH ALFRED CONSOLS.—SPECIAL REPORT.

Ventnor, Hants, Cornwall, March 15: South Alfred Consols Mine is situated in the parish of Phillack, about a mile and a-half south-east from the port of Hayle. The set, or mining concession, is very extensive, being nearly a mile in length, and of considerable width, embracing a great number of copper lodes; it is parallel south and adjoins the celebrated Great Wheal Alfred and Alfred Consols Mines, which have returned or sold mineral to the value of much more than a million sterling. Mining operations have recently been commenced in South Alfred Mine, about the centre of the set, by cutting down from surface one of the ancient shafts to the 20 fm. level (30 fms. from surface), in which a good powerful pumping-engine is erected, and the water drained to the 20 fm. level, which probably will be found to be the bottom of the ancient mine. The 20 fm. level has been driven or extended west from the engine-shaft about 8 fms., on the course; the lode in this drive is highly mineralised throughout, but in places, especially near the end, it contains a great portion of yellow copper ore, which can be taken away at a tribute of 10s. in 11. The lode will average, in the 20 fm. level west from engine-shaft, about 2 ft. wide (in places it is 3 ft. wide), composed of a beautiful friable quartz, blende, iron pyrites, and the whole mixed with yellow and grey sulphur of copper, a very promising lode indeed; its bearing is about east and west, with a northerly dip of about 13 in. in 1 fm. This 20 fm. level is also extended east of the engine-shaft, but being full of debris, I could not examine it more than 5 fms. in the easterly direction, but as far as seen the lode is highly mineralised, and presents similar strength and composition. At the 10 fm. level east end or gallery has been driven east from the engine-shaft 30 fms. on the course of the lode. At about 22 fms. east from engine-shaft another small ancient shaft has been sunk from surface, which communicates with the 10 fm. level about 8 fms. behind the present end; during the whole of this drive the lode is large, and the backs in places have been worked away. In the bottom of this level (the 10) good stones of yellow copper ore have been taken from the lode, which is about 2 ft. wide, and of pretty near the same composition as that of the lode in the 20 fm. level, but not so metalliferous. There is a very fine silver cross in the set, bearing nearly parallel with the lode. The cross-course, or fork, against which they had the greatest riches in Alfred Consols Mine, crosses the lode a little to the east of the engine-shaft, against which similar deposits as they found in Alfred Consols may reasonably be expected in South Alfred Consols Mine. In the western part of the set the great cross-course that made all the riches in Great Wheal Alfred crosses all the lodes in the South Alfred Consols Mine, so that similar deposits may be calculated on in this mine as those found in Great Wheal Alfred, as parallel lodes are found productive in the vicinity at the junctions with the same cross-course. South Alfred Consols is a young mine of great promise; although one lode only is in the present state of being worked, there are several in the concession, and if this mining ground has the liberality it deserves, from the indications it presents, the 20 fm. level, my candid opinion is that before the mining operations reach the 40 fm. level (at which depth the largest deposits of mineral have generally been found in the mines of this neighbourhood) South Alfred Consols will be a good productive and remunerative mine. Looking at the rock, congenial clay-slate, the lodes are embedded in, the highly mineralised character of the lodes, the elvan, the flookan, and cross-course, I am fully persuaded South Alfred Consols will be one of the greatest copper mines in the western part of Cornwall, and not inferior to its nearest neighbours, Great Wheal Alfred and Alfred Consols.—JAMES BARRETT.

**"LUCKY" MINERS.**—In these days of depressed mining, the words "lucky miners" read rather paradoxical, but it is, nevertheless, true that there are such. A pair of men will get a "start" in Dolcoath Mine from their last taking amounting to something like 200l. A pair of men working at Wheal Buller will get a similar amount on their next pay-day. These men are "tributers"—fortunate dogs!—Cornwall Gazette.

**EXPERIMENTS IN DOWSING AT BODMIN.**—Dr. Couch, a short time since, delivered a lecture at the Literary Institution, and whilst pointing out many popular errors, commented on "dowsing," which has been held in Cornwall for hundreds of years to be a means of discovery of copper lodes.—a fact which he, as a scientific man, denied. The lecture led to much discussion, and it was ultimately arranged between the parties concerned, that the matter should be tested; and Mr. Richard Marks, of Bodmin, calculator, who has engaged in mining speculations and in the discovery of copper lodes for many years, undertook to prove that "dowsing" was practically a science. According to previous arrangement, Mr. Sandoe, of the Town Arms Hotel, went alone to his field, and deposited six old copper-pieces; also some distance further on, six new penny-pieces, and shortly after eleven o'clock Mr. Marks appeared. He was to have the right of going three times up the given line, if he required it. The course was about 160 yards in length, and large spar stones were laid at about 25 ft. apart, as an indication of the line. Mr. Marks having provided himself with a hazel twig, was blindfolded, and led by Mr. Harvey. He took twelve minutes in going up the given course, the hazel rod having yielded once only to the supposed copper attraction. At that spot, however, he requested Mr. Harvey to put down a small rod. The next course took twenty minutes, when the hazel rod again yielded once. The third course took 22 minutes, when and therefore the result was supposed to indicate three lodes. But upon examination it was found that the nearest rod was full 80 ft. from the old copper, and at least 80 ft. from the new ones. Thus was extinguished one of the popular errors of Cornwall. The spectators were satisfied that everything had been done fairly, and most left with the conviction that the belief in "dowsing" is a delusion. The ground was previously gone over by Mr. Marks, and he felt perfectly satisfied that there was no lode in it.

**ANOTHER CURE OF COUGH BY DR. LOOCK'S PULMONIC WAFERS.**—"8, Wilmot-terrace, St. Leonard's-street, Bromley, E.—I can myself testify that they shall do me good to a most severe cough, so bad that I was unable to lie down, and I attribute, I may best to recommend them.—Wm. Nicholas." They give instant relief to asthma, consumption, coughs, colds, and all disorders of the breath, throat, and lungs. Price, 1s. 1/4, 2s. 6d., and 4s. 6d. per box. Sold by all Druggists.

**HOLLOWAY'S PILLS.—DESIRABLE POSSESSION.**—Without health no amount of wealth, no means of pleasure, are of the slightest value. It is inconceivable how small a disturbance of the animal functions begets wretchedness, and how readily it may be rectified by a few doses of some purifying and regulating medicine, such as these world-renowned pills. These have proved the best friend to mankind in every grade, in every land, and under every circumstance. Holloway's pills purify the blood, rectify digestion, stimulate the liver and kidneys, and remove the poisons. When fevers, influenza, and other ailments are epidemic, these pills should be taken occasionally by everyone, to keep the blood and system free from the seed of the prevailing pestilence.

# THE OPERATIONS AT MONT CENIS.

The London Review has an interesting account of the principles on which Mont Cenis is being pierced for the Franco-Italian Railway. Air, compressed by water power, is the motive force employed in tunnelling:—

This new air-compressor is curious from its very simplicity. Imagine a large syphon of cast-steel pipe, with equal legs, closed at each foot; and suppose this inverted, and considerably flattened at the bow. Along this flat base of the double tube moves a piston, worked by a water-wheel, needing of course, only a slight "fall." The syphon being more than half full of water, as soon as the piston moves to the right the water rises in the right leg, squeezes the air, and at last forces it out through a valve into a receptacle. As it retreats and moves to the left the same process goes on on that side, and when the air has been compressed and driven out, atmospheric air rushes in through other valves at the top to fill up the void so made. By this simple process, air is compressed to one sixth of its ordinary volume. The power of the water-wheel, of course, less than that of an hydraulic pump, but the stroke is more rapid; so that the amount of the work done is, it appears, quite as great. The quantity of compressed air required for working the pistons and purifying the tunnel after the explosions is immense—a million of cubic feet per day. Hence there are multitudes of syphons constantly at work; and the factory is described as looking like a giant forest of aspen trees, into such strange branching shapes are the iron tubes twisted. One great advantage in such a number of generators and receptacles is that an accident does not stop the works, for each supply pipe can be cut off from its neighbours. The tunnel inside is full 13 ft. wide, and high proportion, lighted with gas (the clear burning of which is an admirable test of the purity of the air), and provided with a trench along its whole course, which, besides carrying off the drainage and holding the gas-pipes, would answer in the last resort as a means of escape for the workmen in case there should be a large falling in of rock. We must not suppose, however, that all this work is done by the compressed air. As soon as the chisels, some 90 in number on the advanced front have made holes about a yard deep, which they do in about six hours, the machine is stopped, the holes are filled with fuses, as in ordinary mining work, and the workmen hide behind the "battering train" till the explosion is over. There is very little to fear from falling rocks; the rock is so hard and the holes so numerous (the surface attacked being about seven square yards), that the pieces loosened are small. The danger is from the gases generated by the gunpowder. To make the tunnel habitable, the moment the blasting is over the supply-pipes are all turned full on, and the compressed air is allowed to pour out until the fumes of gunpowder are driven far to the rear. M. Meno's testimony is, that the air up at the far end of the tunnel is much purer than it is about the middle. Here the vapours lodge, and the vitiated air has to be pumped out by another of M. Sommeiller's contrivances. Pulmonary complaints, indeed, are not uncommon among the workmen; but these are probably more due to the sharp mountain air and to the sudden changes—from warm tunnel to cold hill-side—than to any excess of carbonic acid. When gas can burn freely, man can live safely. The "perforator" consists of a number of chisels fixed to pistons, which are worked horizontally by the compressed air. The difficulty was not to get the mere stroke, but to give a triple motion, something like that which the hand communicates to a tool. The chisel should deliver a blow; it should turn round a little (all cutting, we know, is really sawing or rasping); it should go deeper at every stroke. The ordinary pistons provide for the first; the third is easily managed by means of a strong spring behind each chisel; the second is contrived by means of a cogged wheel, one tooth of which is liberated at every stroke by a ratchet, working in a little cylinder of its own. When the "perforator" has passed on, a little army of workmen attacks the sides and roof of the aperture which it has made. Far in the rear of what may be called the head of the battering train, groups of men are seen sitting in cages overhead and down the walls. Each group gathers on a flooring its own heap of debris; and every now and then up comes a wagon along the tram, stops under a trap-door, and is soon filled with what will form for centuries a supply of road metal for all the neighbourhood. And thus the great tunnel is being made—slowly, but surely—at the rate of about three yards in the 24 hours; half a yard more at the Modane (Savoie) and than at the other. Six years more will, they say, finish it; and we presume that about one third of it is already done, and that they have been four years at work at one end and two at the other. The rock has hitherto been metamorphic; but the centre of the mountain is a kind of quartz, so hard that they expect it will fare ill with their chisels when they come to bite into it.

# LIABILITY OF SHAREHOLDERS TO BE CHARGED AS CONTRIBUTORIES.

—The Lord Chancellor has decided, in re the Agricultural Insurance Company, that if a shareholder claims to be discharged from a company by a transaction between himself and the directors, which he alleges has, though irregular, acquired validity by lapse of time and acquiescence, he must show that the transaction was fully made known to the company, or faithfully narrated in the books of the company, or reports of the directors, so that if ordinary attention had been used, it must have been observed by, and become known to, the rest of the shareholders. In this case, one Joseph Spackman and other shareholders, in the Agricultural Insurance Company (which as originally constituted, was for insurance on live stock against losses by disease or other accidents), had agreed with the directors to pay 4000l., and thereupon the directors should, under the powers given them by the Deed of Settlement, declare their shares forfeited for the non-payment of a then pending call. The books and papers of the company, accessible to the shareholders, failed to show the real nature of the arrangement; but, after it had been carried out, Spackman and the others were no longer treated as shareholders, and several alterations were made in the business of the company, to which alterations they were not parties. Eleven years afterwards, the company being in course of winding-up, an application was made to put Spackman and the others on the list of contributories. It was held by the Lord Chancellor, reversing the decision of the Master of the Rolls that they ought to be placed on the list.

# GEOLOGICAL SOCIETY OF LONDON.—March 8: Mr. W. J. Hamilton

(President) in the chair. The Rev. T. H. Brown, High Wycombe, Berks; Thomas Gurney, Mining Engineer, Backworth, Northumberland; and W. R. Williams, Mining Engineer, Dolgelly, North Wales, were elected Fellows. Prof. Nilsson, of Stockholm, was elected Foreign Correspondent. The following communications were read:—1. "On the Echinodermata from the South-east Coast of Arabia, and from Bagh on the Nerubudda," by P. Martin Duncan, M.B., Sec. G.S. 2. "On the Fossil Contents of the Genista Cave at Windmill Hill, Gibraltar," by George Busk, F.R.S., F.G.S., and the late Hugh Falconer, M.D., F.R.S., F.G.S.; communicated by the Secretary of State for War. The following specimens were exhibited:—A series of fossil bones from the Caves of Windmill Hill, Gibraltar; exhibited by G. Busk, F.R.S., F.G.S. A specimen of *Clypeaster Agassizianus*, from near Kandy, Ceylon; exhibited by S. N. Carvalho, F.G.S. Wednesday next the following papers will be read:—"Remarks on the Caves and Fossils of Gibraltar," by Lieutenant Warren; communicated by Sir R. L. Murchison, K.C.B., F.R.S., F.G.S.—2. "On the asserted occurrence of Human Bones in the ancient fluvial deposits of the Nile and Ganges, with comparative remarks on the Alluvial Formation of the two Valleys," by the late Hugh Falconer, M.D., F.R.S., F.G.S.—3. "On some Tertiary Deposits in the Colony of Victoria, Australia," by the Rev. J. E. T. Woods, F.L.S., F.G.S.

**THE TIN STANDARD.**—The tin standard still continues its downward tendency, and in consequence of the depressed state of the tin trade, was further reduced 2s. per cwt. on all sorts on Wednesday last, as follows:—Common, 85s.; superior common, 86s.; fine, 87s.; superior fine, 88s. The last drop of 2s. took place on Jan. 26. Metal continues nominally as before, but can be had much under quotations. The standards this time last year were—common, 108s.—109s.; refined, 111s.—113s. This shows a difference of about 23s. per cwt.—West Britain.

# India Office.

**BY ORDER OF THE SECRETARY OF STATE FOR INDIA** IN COUNCIL, notice is hereby given that the DIRECTOR-GENERAL OF STORES FOR INDIA will be READY, on or before MONDAY, the 20th instant, to RECEIVE PROPOSALS in writing, sealed up, from such persons as may be willing to supply—

SLIP COPPER. And that the conditions of the said contract may be had on application at the India Store Office, Cannon-row, Westminster, where the proposals are to be left any time before 2 o'clock P.M. of the said 20th day of March 1865, and where they will be opened by order of the SECRETARY OF STATE for India, on the 21st inst. GERALD C. TALBOT, Director-General.

India Office, March 13, 1865.

**TO INVENTORS AND PATENTEES.—A GENTLEMAN** having an extensive connection with manufacturers, merchants, and others, would be GLAD TO UNDERTAKE THE SALE OF INVENTIONS OR PATENTED ARTICLES, on commission.—Apply to Mr. Rawley, patent office, 14, Clarendon-street, Bristol. N.B.—Continental and foreign agencies solicited.

**JOINT-STOCK COMPANIES ACCOUNTS.—A GENTLEMAN, EXPERIENCED IN KEEPING THE ACCOUNTS OF JOINT-STOCK COMPANIES, IS WILLING TO UNDERTAKE TO OPEN THE BOOKS OF ANY NEW UNDERTAKING, OR TO ARRANGE TO KEEP THE BOOKS OF COMPANIES ALREADY ESTABLISHED, at moderate remuneration.—Address, "M. E." care of Mr. Robert Clarke, printer, stationer, &c., 51, Threadneedle-street, E.C.**

**ISAAC FRANCIS, NANT, WREXHAM, a dresser of 30 years** experience, is OPEN TO INSPECT ANY DRESSING PLACE on moderate terms Mr. FRANCIS can introduce PLANS OF IMPROVEMENTS that will SAVE THIRTY PER CENT. COST in certain departments of any dressing floors.

**MR. D. STICKLAND, M.E.,** having had upwards of 40 years' mining experience in Cornwall, several years of which he has had the entire management of mines therein, enables him to GIVE GOOD ADVICE thereon. MINES INSPECTED AND FAITHFULLY REPORTED ON. DEALER IN MINING, RAILWAY, AND OTHER SHARES. His monthly Circular forwarded on receipt of six postage stamps. Criddle Mine, St. Issey, Padstow, Cornwall.

**MR. G. D. SANDY, SHAREDEALER, No. 48, THREEDNEEDLE STREET, LONDON, E.C.** (Member of the Mining Exchange), is in a position to give judicious advice about many market mines, and can also name a selected few not at present noticed, the prospects of which warrant an early advance, and are selling at a great sacrifice. Business transacted for cash or account. A current daily price list of market transactions issued, and may be had on application.

**MR. J. P. ENDEAN, STOCK AND SHAREBROKER** 1, CROWN COURT, OLD BROAD STREET LONDON, E.C. Having had 25 years' experience in the mining districts of Devon and Cornwall, and three in the London market, with daily information of important changes from qualified agents, also the most authentic reports relating to other investments, he is in a position to afford the earliest information to his clients, and to direct capitalists whether to buy or sell in mines, railways, or other securities.

Investors should apply to him for reliable information relative to the Chiverton Mines also the Camborne and Hlogan districts. A carefully selected list of sound progressive and dividend shares (certain to rise large percentage immediately) forwarded on receipt of 5s. in stamps. Orders and telegrams receive immediate attention.

**MR. H. WADDINGTON, SHAREDEALER, 77, OLD BROAD STREET, LONDON, E.C.** Mine Shares and Stock Exchange Securities dealt in at close prices. Investors and speculators will do well to buy Wheel Buller shares at present price—£30. Wheel Rose, Great North Downs, and North Trearkey shares should be bought at once, even if at a little higher than quoted prices. From 50 to 100 per cent. rise will reward those who act promptly on the above advice.

# In Chancery.

**IN Re the COMPANIES ACT, 1862, and Re the BRITISH COPPER COMPANY (LIMITED).**—TO BE SOLD, BY PUBLIC TENDER, all that VALUABLE MINERAL PROPERTY, called the REDNAL COPPER MINE, situate at Eardiston, Salop, within two miles of the Rednal Station on the Shrewsbury and Chester Railway, together with the EXTENSIVE BUILDINGS, PLANT, STORES, and MATERIALS, by Mr. H. THREEDNEEDLE EDWARDS (the Liquidator of the British Copper Company, Limited), at his office, No. 9, King's Arms-yard, Moorgate-street, London, on Monday, the 24th day of April, 1865, at One o'clock precisely. The sett extends over about 115 acres, and about half a mile on the run of the lode. It is granted for the term of 21 years, from the 25th December, 1864, at a royalty of 1-15th, and a yearly rent of £100, to merge into royalty, and is determinable at twelve months' notice.

An engine-shaft has been sunk to the depth of 30 fms. There are also two other shafts, and levels are driven opening up a considerable extent of ground. There are upon the mine 100 tons (computed) of rich quality copper ore, ranging from 3 to 15 per cent. produce.

Convenient and substantial STONE-BUILT BUILDINGS have been erected in immediate contiguity to the turnpike road, comprising engine-house, fitted up with 12-horse ENGINE (complete), material house, blacksmith's shop, carpenter's shop, changing house, account house, and engine house for 50-horse power engine (unfinished).

The mine is situated in the sandstone formation; the lode is well defined, and about 4 ft. wide, with a leader, about 18 in. in width, of rich copper ore.

Being a pure carbonate of copper, similar to the ore of the Alderley Edge Mines, the copper is extracted from the ore, on the mine itself, by precipitation, at so moderate a cost that the before-named mine is paying 100 per cent. dividends, although their ore only average a produce of 1 1/4 per cent.

The mine has been favourably reported on by Capt. Charles Thomas, of Dolcoath; Capt. Francis Phillips, late of Alderley Edge; and Capt. Pascoe, of the Mottram Mines, near Alderley. Copies of such reports can be obtained on application.

Upwards of £3500 have been laid out on the mine within the last two years, and it is believed that if £1000 is expended in building tanks for precipitating the copper, and extending the levels, large returns will be made by the proprietors.

Orders to inspect the above property can be obtained on application to the liquidator, at his office, where particulars and conditions of sale can be had; as also of A. PUTNICK, Esq., Solicitor, 31, Threaddneedle-street, London; at the Raven Hotel, Shrewsbury; the Railway Hotel, Rednal; and of Mr. CHARLES PRICE, at the mine.

**GRYLLS CONSOLS.**—Parties who have been induced to take shares in this mine will oblige by communicating with "J. M." care of J. B. Payne, Esq., solicitor, St. James's-square, Manchester.

**TO CAPITALISTS.—WANTED, A PARTNER IN ONE OF THE MOST PROMISING COLLIERIES IN NORTH WALES.** The royalty is about 500 acres, and is already proved to contain four valuable seams of coals, adapted both for house and steam purposes, and the returns on the capital invested will be at least 50 per cent. annually. The capital is required for the full development of the concern, and if preferred the incoming partner may have the entire management, financially and otherwise.—Address, "W. 15," Post-office, Liverpool.

**WANTED, AN AGENCY IN ANY MINES IN ENGLAND OR WALES, AS MANAGER OR RESIDENT AGENT.** Has been brought up to mining for the last 25 years, and has been connected with some of the best mines in Wales for the last 20 years or more. The best of references can be forwarded upon application. Open to inspect and report upon any mining property in Wales, England, Ireland, or Scotland.—Address, "A. B. K.," Post-office, Holywell.

**WANTED, A SITUATION AS AGENT OR MANAGER, at home or abroad, in a SILVER-LEAD SMELTING WORKS.** The advertiser is thoroughly competent in all the branches unexceptionable.—Address, "W. A. J.," 22, Edge Mount, Paddington, Liverpool.

**WANTED, A STEAM PUMPING ENGINE, 80 in. cylinder.** Letters to be addressed, with full particulars, to Mr. WM. BATTYE, 33, Great Winchester-street, E.C.

**WANTED, A 20 to a 24 in. SECOND-HAND WINDING ENGINE, complete.**—Particulars to be forwarded to Mr. THOS. HOLLOWAY, mining offices, Leilant, Hayle.

**PARTIES HAVING AT THEIR DISPOSAL FIELDS OF HARD OR SOFT COAL, and SHALE, will hear of a purchaser by addressing "X. O. L.," MINING JOURNAL OFFICE, 26, Fleet-street, London, E.C. Communications stating locality, extent, and any other particulars, will be held strictly confidential.—March, 1865.**

**NOTICE TO MINING COMPANIES.—TO BE SOLD, THIRTY-FIVE ACRES of fine LAND, with capital MANSION, stabling, offices, walled garden, all in excellent order, well watered, handsomely planted, four miles from Dublin. A RICH VEIN OF LEAD ORE discovered on this land; competent judges pronounce it of superior quality. Parliamentary title.—For terms, address Mrs. LYNARD RIVERSDALE, Palmerstown, County Dublin.**

**IRONSTONE MINES, ROYALTIES, and BLAST FURNACE FOR SALE, IN GERMANY.**—The ironstone produces the best Spiegel iron, for which there is a constantly increasing demand, and the supply of charcoal is abundant in the neighbourhood of the works.—For price and further particulars apply to Messrs. FIRMEN and WYATT, 27, College-street, Dowgate-hill, London.

**MWYNDY IRON ORE COMPANY (LIMITED).**—Notice is hereby given, that the TRANSFER BOOKS of the above company are CLOSED until after the 30th day of March inst. By order, N. M. MAXWELL, Sec. London, March 11, 1865.

**MWYNDY IRON ORE COMPANY (LIMITED).**—Notice is hereby given, that the THIRD ANNUAL GENERAL MEETING of the shareholders in the above company will be HELDEN at the offices of Messrs. John Taylor and Sons, No. 6, Queen-street-place, Upper Thames-street, on Wednesday, the 29th day of March inst., at One o'clock precisely. Pursuant to notice, the transfer books are closed until after the 30th inst. London, March 11, 1865. By order, N. M. MAXWELL, Sec.

**NOUVELLE MONTAGNE COMPANY.—THE ANNUAL GENERAL MEETING of shareholders will be HELD at the Hotel de Subis, Liege, on MONDAY, the 10th April, at One o'clock. By order of the Council of Administration, V. BOUCHY, Le Directeur General de la Societe. Engls, le 6 Mars, 1865.**

**ISSUE OF 4000 SEVEN AND A-HALF PER CENT. MINIMUM GUARANTEED PREFERENCE SHARES OF £10 EACH.**

**WALLACHIAN PETROLEUM COMPANY (LIMITED).**—Capital £200,000. In 4000 A shares of £10, now offered, entitled to a preferential dividend of 7 1/4 per cent., guaranteed out of first profits, with rateable participation in further profits. £1 per share payable on application, £2 per share payable on allotment, £2 per share payable on 1st June, or the entire £5 per share may be paid up at once, and receive the guaranteed 7 1/4 per cent. preference dividend thereon. Future calls (if required) not to exceed £2 per share, and at intervals of not less than three months.

**DIRECTORS.** ROBERT PULLING, Esq. (Messrs. R. and W. Pulling), 18, Philipot-lane—CHAIRMAN. ALFRED BRYANT, Esq. 3, Catherine-coat, Tower-hill. JOSEPH FRY, Esq. (Messrs. Truman and Fry), Gresham House. AUGUSTO SOARES, Esq. (Messrs. M. and A. Soares), 40, Seething-lane. EDWARD TEWART, Esq., 16, York-place, Portman-square. G. S. TROWER, Esq. (Messrs. Trowers and Lawson), St. Mary-at-Hill. J. E. VANCE, Esq., 37, Westbourne-terrace, Hyde-park.

**BANKERS.—The Bank and Masterman's Bank (Limited).** SOLICITORS.—Messrs. Courtenay and Croome, 9, Gracechurch-street. BROKER.—John Inghelby, Esq., 2, Copthall-court, and Stock Exchange. AUDITOR.—Alexander Beattie, Esq.; George Hall, Esq. OFFICES.—66, BISHOPSGATE STREET WITHIN.

This company was formed in February, 1864, and during the last 12 months has succeeded in providing the necessary plant and getting into efficient working order many of its valuable oil springs, situate in the important concessions it has obtained in Wallachia.

Prof. Capellini, the eminent Italian geologist, who has made a special study of the petroleum districts of America and elsewhere, and has recently visited and surveyed those of Wallachia, states that the Principality furnish a vast field for petroleum enterprise, and adds—"I am of opinion, however, that no other company can compete with the Wallachian Petroleum Company, as they decidedly possess the richest and most accessible localities."

Upwards of 3000 tons of oil have already been obtained from the company's wells and from contractors; the yield at present from the wells of the company is about 30 tons weekly.

The directors propose to erect a refinery establishment at or near Irbilia. They estimate that when it is completed a net weekly profit of about £400 can be realised on the present limited rate of yield from the company's wells. As these increase it is confidently expected that 60 tons or more of oil will be produced weekly, by which means it is fully anticipated that the profits will be realised equal to similar enterprises in America, some of which are dividing from the profits of refined oil between 10 and 20 per cent. per month among their shareholders.

With the view of establishing such refinery, and to keep in reserve the uncalled ordinary capital of the company, it has been decided to issue the above-mentioned preference shares.

Prospectuses and report after referred to of Prof. Capellini, of Bologna, can be had at the offices of the company, or from the company's solicitors or broker.

**WALLACHIAN PETROLEUM COMPANY (LIMITED).**—Notice is hereby given, that the LIST OF APPLICATIONS for the preference shares of the company will be CLOSED on WEDNESDAY, the 22d inst., for LONDON, and THURSDAY, the 23d inst., for the COUNTRY.—March 16, 1865. By order.

**BARRETT AND CO., 9, SPRING GARDENS, CHARING CROSS, STOCK, SHARE, and FINANCE BROKERS,** transact business of every kind in British, Foreign, and Colonial Stock, Shares, Bonds, Docks, Debentures, Mines, Miscellaneous Investments, including American Government Securities, Confederate States Securities, Spanish, Mexican, and other stocks, and are in direct communication with the powerful bankers and brokers in all European towns and cities, in the Federal and Confederate States, and in the Canada. The earliest and most accurate information received on monetary matters. Investment Circular gratis. 9, Spring-gardens, S.W., March 4, 1865.

**DOUBLE NUMBER OF THE FIELD, THE COUNTRY GENTLEMAN'S NEWSPAPER, March 18,** contains intelligence from all parts of the world, relating to Hunting, Shooting, Angling, Shooting Quarters to Let, Wild Sports, Pastimes, Natural History, the Turf, the Farm, the Garden, Chase, Whist, the Country House, Bee Keeping, Pigeons, Pisciculture, and Acclimatisation.—A copy in return for seven stamps, to the "Field" office, 346, Strand.







**NICHOLLS, WILLIAMS, AND CO. ENGINEERS,**  
BEDFORD WORKS, TAVISTOCK.  
MANUFACTURERS OF STEAM ENGINES OF EVERY DESCRIPTION, made on the BEST AND NEWEST PRINCIPLES. We beg more especially to call the attention of the public to the manufacture of our BOILERS, which have been tested by most of our leading engineers. PUMP WORK CASTINGS OF EVERY DESCRIPTION, both of brass and iron. HAMMERED IRON AND HEAVY SHAFTS OF ANY SIZE. CHAINS made of the best iron, and warranted. RAILWAY WORK OF EVERY DESCRIPTION.  
ALL ORDERS FOR ABROAD RECEIVE THEIR BEST ATTENTION. NICHOLLS, WILLIAMS, AND CO. have had 20 years' experience in supplying machinery to foreign mines, and selecting experienced workmen to erect the same, where required.  
Messrs. NICHOLLS, WILLIAMS, AND CO. have always a LARGE STOCK OF SECOND-HAND MINE MATERIALS in stock, and at moderate prices.

**HALLIWELL AND CO. ENGINEERS' CONTRACTORS**  
FOR BLAST FURNACES (COMPLETE).  
Plans and Estimates Furnished. Satisfactory references.  
ADDRESS.—WIDNES DOCK AND WIGAN.

**PATENT FLEXIBLE TUBING,**  
AND BRATTICE CLOTH FOR MINES,  
MANUFACTURED BY  
**ELLIS LEVER,**  
PATENTEE,  
WEST GORTON WORKS, MANCHESTER.

**TAVISTOCK IRONWORKS AND STEEL ORDNANCE COMPANY (LIMITED).**  
(LATE GILL AND CO.)  
ENGINEERS, IRON AND BRASS FOUNDERS,  
MANUFACTURERS OF  
STEAM ENGINES, BOILERS, AND MACHINERY OF ALL KINDS.  
CHAINS, SHOVELS, EDGE TOOLS, AND EVERY DESCRIPTION OF CAST AND HAMMERED IRON FOR MINING, MANUFACTURING, RAILWAY, OR AGRICULTURAL PURPOSES.  
Machinery sent to all parts of the world.  
Foreign mining companies supplied on liberal terms.

**RAILWAY CARRIAGE COMPANY (LIMITED),**  
ESTABLISHED 1847.  
OLDBURY WORKS, NEAR BIRMINGHAM.  
MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, AND EVERY DESCRIPTION OF IRONWORK.  
Passenger carriages and wagons built, either for cash or for payment over a period of years.  
RAILWAY WAGONS FOR HIRE.  
CHIEF OFFICES.—OLDBURY WORKS, NEAR BIRMINGHAM.  
LONDON OFFICES.—6, STOREY'S GATE, GREAT GEORGE STREET, WESTMINSTER.

**THE BEVERLEY IRON AND WAGON COMPANY (LIMITED).**  
MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, WROUGHT AND CAST IRON CARRIAGE AND WAGON WHEELS, AXLES, HAMMERED IRON, AND HEAVY SMITHS' WORK FOR ENGINEERS, &c. BRASS AND IRON FOUNDERS. MAKERS OF PORTABLE FARM RAILWAYS, TURNABLES, CROSSINGS, SWITCHES, &c. AGRICULTURAL MACHINISTS. MANUFACTURERS OF FIELD, ROAD, AND BARN IMPLEMENTS. PATENT LORRY, CART, AND CARRIAGE WHEELS, WITH WOOD OR IRON NAVES. REAPING MACHINES, CLOD CRUSHERS, CORN MILLS, &c. SAW MILL PROPRIETORS. GENERAL TIMBER CONVERTERS FOR HOME AND FOREIGN RAILWAYS, STATIONS, BARACKS, EXHIBITIONS, &c.  
IRONWORKS, BEVERLEY, YORKSHIRE.  
JAMES DEWHIRST, Sec.

**THE BIRMINGHAM WAGON COMPANY (LIMITED)**  
MANUFACTURE RAILWAY WAGONS OF EVERY DESCRIPTION, for HIRE AND SALE, by immediate or deferred payments. They have also wagons for hire capable of carrying 5, 8, and 10 tons, part of which are constructed specially for shipping purposes. Wagons in working order maintained by contract.  
EDMUND FOWLER, Sec.  
OFFICES.—3, NEWHALL STREET, BIRMINGHAM.

**A GREAT DEAL OF INFERIOR SPIEGELEISEN** having been sold in ENGLAND, to the PREJUDICE OF THE GENUINE ARTICLE. I beg to OFFER BEST QUALITY OF SPIEGEL IRON, ex steamer in Hull, at £6 10s. per ton. SECOND QUALITY, £5 5s. Also, FUDDELE STEEL in BARS, ordinary sizes, £15 per ton. Apply to manufacturers in the metal trade, wishing to be represented in Hamburg, will please communicate.

**Gun Cotton Manufactory.**

**MESSRS. THOMAS PRENTICE AND CO.,**  
GREAT EASTERN CHEMICAL WORKS, STOWMARKET, SUFFOLK.  
This manufactory has been established for the purpose of preparing GUN COTTON, according to the Austrian process, and was opened on the 26th of January last, under the inspection of Baron Lenk's Commission. Messrs. Thomas Prentice and Co. are now able to SUPPLY GUN COTTON, in its most approved form, either for the purposes of engineering and mining, or for military and submarine explosion, and for the service of artillery, as a substitute for gunpowder.

The advantages of Baron Lenk's GUN COTTON are the following:—  
For PURPOSES OF ARTILLERY.—The same initial velocity of the projectile can be obtained by a charge of gun cotton one-fourth of the weight of gunpowder. There is no smoke from the explosion of gun cotton; it does not foul the gun, nor heat it to the injurious degree of gunpowder. There is much smaller recoil of the gun. The same initial velocity of projectile is produced, with a shorter length of barrel. In projectiles of the nature of explosive shells it breaks the shell more equally into much more numerous pieces than gunpowder. When used in shells, one-third the weight of gun cotton produces double the explosive force of gunpowder.

For CIVIL ENGINEERING AND MINING.—In driving tunnels through hard rock a charge of gun cotton of given size exerts double the explosive force of gunpowder, thus a smaller number of holes is necessary. It may be so used as, in its explosion, to reduce the rock to much smaller pieces than gunpowder, and so facilitate its removal. As gun cotton produces no smoke, the work can proceed much more rapidly, and with less injury to the health of the men. In working coal mines the advantages of bringing down much larger quantities of material with a given charge, and the absence of smoke in the explosion, enable a much greater quantity of work to be done in a given time at a given cost. The weight of gun cotton required to produce a given effect in mining is only one-sixth part of the weight of gunpowder. In blasting rock under water the wider range and greater force of a given charge is a great element in cheapening the cost of submarine work. The peculiar local action of gun cotton, to which the effects of gunpowder show no analogy, enables the engineer to destroy and remove submarine stones and rocks, without the preliminary delay and expense of boring chambers for the charge.

For MILITARY EXPLOSIVES.—The facility of transport is increased, the weight of gun cotton being one-sixth that of gunpowder. The peculiar localised action of gun cotton facilitates the destruction of bridges and palisades, and every obstacle. For submarine explosion, gun cotton has the advantage of a much wider range of destructive power than gunpowder. For the same purpose gun cotton, from its lightness, has the advantage of keeping afloat the water-tight case in which it is contained, while gunpowder sinks it to the bottom.

For NAVAL WARFARE.—In the batteries of ships, between decks, and in casemated forts, the absence of smoke facilitates continuous rapid firing. The absence of fouling and of heating are equally advantages for naval use for military artillery.

GENERAL ADVANTAGES.—Time, damp, and exposure do not alter the qualities of the patent gun cotton. It has already been preserved 10 years without injury or decay. It can be transported through fire without danger, simply by being wetted, and when dried in the open air it becomes as good as before. In the case of a ship, or a fortress, or a city being on fire, this quality may be of the greatest value. It is much safer than gunpowder, owing to its being manufactured in the shape of rope or yarn. It cannot escape from its package, or be spilled by accident. The patent gun cotton is entirely free from the danger of spontaneous combustion, and secures that degree of safety and certainty which, at the time of the original invention, the gun cotton of Schöberlin did not possess.

Messrs. THOMAS PRENTICE AND CO. are now in a position to contract with the owners of mines, engineers, contractors, and governments for gun cotton prepared in the various forms required for their use. Mining charges will be supplied in the rope form, according to the diameters of bore required, and gun cotton match-line, as well as instructions for using it in mines, will be supplied with it.

The great advantage of gun cotton make its use in practice very much cheaper than comparative price would appear to show; in blasting rock, for example, the rapidity and quantity of the work done, with a given expense of wages, &c., is largely in favour of gun cotton.

Messrs. THOMAS PRENTICE AND CO. are also prepared to manufacture the gun cotton, and deliver it in the form of gun cartridges, adapted to every description of ammunition; all they require for this purpose being a drawing of the gun, gunpowder cartridges, and ammunition, with the specification of weights, sizes, and initial velocities.

Artillerists who prefer to manufacture their own cartridges may make special arrangements with the patentees through Messrs. PRENTICE AND CO.  
Stowmarket, March 10, 1864.

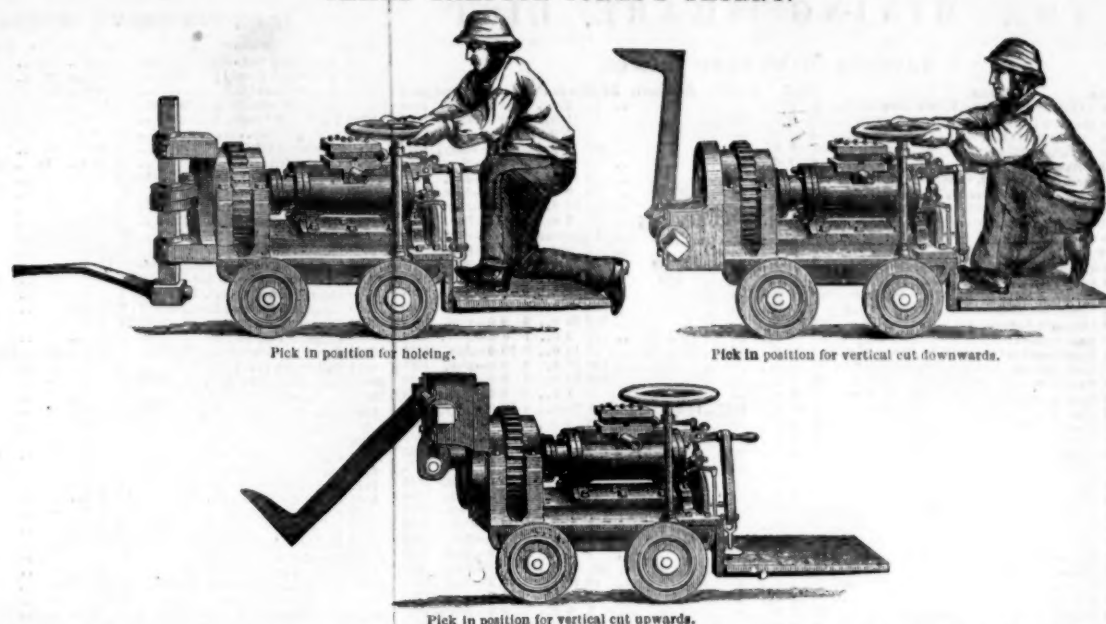
**THE NEWCASTLE CHRONICLE AND NORTHERN COUNTIES ADVERTISER.** (ESTABLISHED 1764).  
Published every Saturday, price 2d., or quarterly 7s. 2d.  
**THE DAILY CHRONICLE AND NORTHERN COUNTIES ADVERTISER.**  
Published every morning, price 1d.  
Offices, 42, Grey-street, Newcastle-upon-Tyne; 50, Howard-street, North Shields; 195, High-street, Sunderland.

**TO THE HARDWARE TRADE.**  
**RYLAND'S IRON TRADE CIRCULAR** is now the leading journal of the trade. Supplied to subscribers only.  
One year ..... £2 2 0  
Half a year ..... 1 1 0  
Quarter of a year ..... 0 10 6  
Payable in advance.  
Office for advertisements, Union-passage, Birmingham.

**THE STOCKTON AND HARTLEPOOL MERCURY AND MIDDLESBOROUGH NEWS** (published at Hartlepool) is eminently the organ of the Coal, Iron, and Iron Ship-building Trades in the extensive Mining and Maritime District of South Durham and Cleveland, with which it has been closely identified since its origin. The "Mercury" was for years the only newspaper published in South Durham and Cleveland, and is yet the only one published more than once a week. Advertisements to be forwarded to the publisher, Mr. JOHN H. BELL, Sontgate, Hartlepool.

**DR. SMITH,** who has had twenty years' practical experience in the treatment of Debility, Spasmodic Disorders of the Nervous System, &c., has published A GUIDE (138 pages) for Self-Cure. Sent to any address on receipt of two stamps. Dr. SMITH may be consulted personally (or by letter) in all private and confidential cases.—Address, SMITH AND CO., 8, Burton-crescent, Euston-road, London W.C. Consultations daily from Eleven to Five.

**COAL CUTTING MACHINERY.**  
JAMES GRAFTON JONES'S PATENT.



Messrs. JONES AND LEVICK, proprietors of this patent, are prepared to supply these Machines, which are on an improved principle, and are constructed to work the coal at any angle from the horizontal to the vertical, thus rendering them capable of "holing" at any angle, and of driving "headings." They are simple and substantial in construction, and are not likely to get out of order. They are already successfully employed in the Barnsley coal district, and are being introduced into the South Wales and other coal mining districts. They are also suitable for mining the argillaceous ironstones of the coal measures, as well as working other mines and quarries.

N.B.—Air Compressing Machinery will be supplied, or plans and specifications furnished.

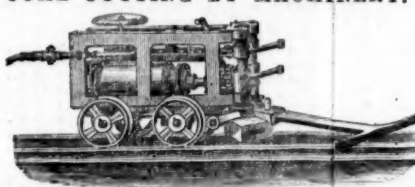
Applications to be made to Messrs. FREDERICK LEVICK and Co., 4, Charlotte-row, Mansion House, London; or Messrs. LEVICK and SIMPSON, Blaina Ironworks, near Newport, Monmouthshire.

**COAL CUTTING MACHINERY.**

THE WEST ARDSLEY COMPANY having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY TO MAKE CONTRACTS FOR THE CONSTRUCTION AND USE OF THEIR MACHINES. The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN THE COST AND IMPROVE THE AVERAGE SIZE OF THE COAL, TO LIGHTEN THE LABOUR, and also TO MODIFY THE SANITARY CONDITION OF THE MINE. All communications to be made to Messrs. FIRTH, DONISTHORPE, and BOWEN, No. 8, Britannia-street, Leeds.

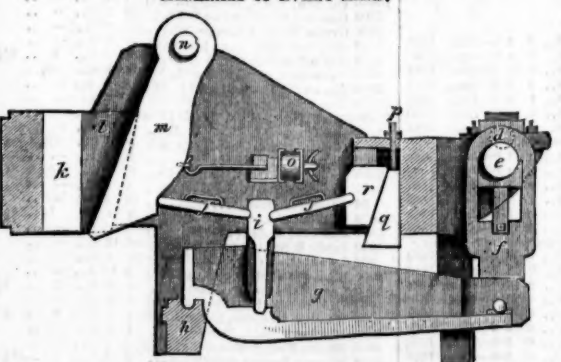
**NOTICE.**—The WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE, or USE ANY MACHINERY in the construction of which any such INFRINGEMENT is MADE.

**COAL CUTTING BY MACHINERY.**



**MESSRS. RIDLEY AND CO.** have, by recently PATENTED IMPROVEMENTS, COMPLETED their TRUNK COAL CUTTING MACHINE, WORKED BY COMPRESSED AIR, and are NOW PREPARED TO NEGOCIATE FOR THE USE, and TO SUPPLY MACHINES, which will be found to COMBINE SIMPLICITY OF CONSTRUCTION WITH PORTABILITY AND ECONOMY IN WORKING. By the use of these machines a CONSIDERABLE SAVING OF COAL IS EFFECTED, and the COST OF LABOUR MUCH REDUCED. Each machine will be guaranteed as to its capabilities, &c.  
All applications to be made to Messrs. RIDLEY and Co., No. 11, South-street, Finsbury London, E.C.; or Mr. PERCY BANKART, agent, 9, Clement's-lane, E.C.  
\* \* \* COLLIERY PROPRIETORS are CAUTIONED against PURCHASING or USING MACHINES, the construction of which will constitute an INFRINGEMENT of the ABOVE PATENT.

**BLAKE'S PATENT STONE BREAKER,**  
OR ORE CRUSHING MACHINE,  
FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.



It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England.

The above section illustrates Blake's Stone Breaker, just as made the last five years and is fully protected in every part by patents.

Extract from Specification:—A short but powerful vibration is imparted to one or both of the jaws by any convenient arrangement, and combination of powerful levers, worked by a crank or eccentric on the main shaft.

LEGAL PROCEEDINGS will be taken at once against any person or persons found making, using, or vending any machine, the construction of which will constitute an infringement on the above patent. Read extracts of testimonials:—

**Alkali Works, near Wednesbury.**—I at first thought the outlay too much for so simple an article, but now think it money well spent.  
WILLIAM HUNT.

**Welsh Gold Mining Company, Dolgelly.**—The stone breaker does its work admirably, crushing the hardest stones and quartz.  
WM. DANIEL.

Our 15 by 7 in. machine has broken 4 tons of hard winstone in 20 minutes, for fine road metal, free from dust.  
Messrs. ORD and MADISON, Stone and Lime Merchants, Darlington.

**Kirkless Hall, near Wigan.**—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton.  
JOHN LANCASTER.

**Oreoca, Ireland.**—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore stone per hour.  
WM. G. ROBERTS.

**General Frémont's Mines, California.**—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or \$75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered a third machine for this estate.  
SILAS WILLIAMS.

For circulars and testimonials, apply to—  
**H. R. MARSDEN, SOHO FOUNDRY,**  
MEADOW LANE, LEEDS.  
Only maker in the United Kingdom.

**Swan Rope Works.**  
**GARNOCK, BIBBY, AND CO.,**  
CHAPEL STREET, LIVERPOOL.  
MANUFACTURERS OF FLAT AND ROUND HEMP AND IRON AND STEEL WIRE ROPES FOR MINING, RAILWAY, AND SHIPPING PURPOSES.  
MANILLA ROPE OF SUPERIOR QUALITY, FIFTY PER CENT. STRONGER, AND THIRTY PER CENT. CHEAPER than Russian hemp rope.  
WIRE ROPE OF FIRST QUALITY WIRE, and the HIGHEST STANDARD OF STRENGTH.

**International Exhibition, 1862—Prize Medal.**

**JAMES RUSSELL AND SONS**  
(the original patentees and first makers of wrought-iron tubes), of the CROWN PATENT TUBE WORKS, WEDNESBURY, STAFFORDSHIRE, have been AWARDED A PRIZE MEDAL for the "good work" displayed in their wrought-iron tubes and fittings.  
Warehouse, 91, Upper Ground-street, London, S.

**BICKFORD'S PATENT SAFETY-FUSE** OBTAINED THE PRIZE MEDALS at the ROYAL EXHIBITION of 1851, at the INTERNATIONAL EXHIBITION of 1862, in London, and at the IMPERIAL EXPOSITION, held in Paris, in 1855.

**Prize Medal Awarded Great Exhibition, 1851, and International Exhibition, 1862.**

**BICKFORD, SMITH, AND CO.,**  
TUCKINGMILL, CORNWALL, MANUFACTURERS OF PATENT SAFETY-FUSE, having been informed that the name of their firm has been attached to fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement:—  
EVERY COIL OF FUSE MANUFACTURED by them has TWO SEPARATE THREADS PASSING THROUGH THE COLUMN OF GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM SUCH TWO SEPARATE THREADS as THEIR TRADE MARK.

**Prize Medals—International Exhibition, Class 1 and 2.**

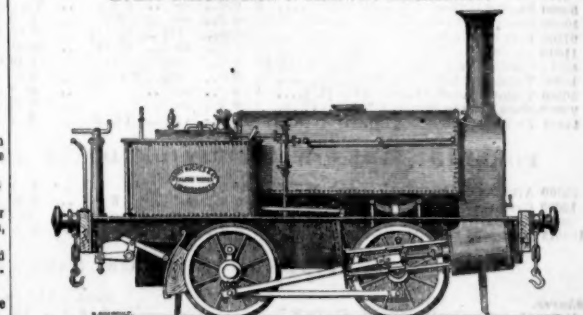
**PATENT PLUMBAGO CRUCIBLES.**—The CRUCIBLES manufactured by the PATENT PLUMBAGO CRUCIBLE COMPANY are the ONLY KIND for which a MEDAL has been AWARDED, and are now used exclusively by the English, Australian, and Indian Mints; the French, Russian, and other Continental Mints; the Royal Arsenal of Woolwich, Brest, and Toulon, &c.; and have been adopted by most of the large ENGINEERS, BRASSFOUNDERS, and REFINERS in this country and abroad. The GREAT SUPERIORITY of these melting pots consists in their capability of melting on an average 40 pounds of the most difficult metals, and a still greater number of those of an ordinary character, some of them having actually reached the EXTRAORDINARY NUMBER of 96 meltings. They are unaffected by change of temperature, never crack, and become heated much more rapidly than any other crucibles. In consequence of their great durability, the saving of waste is also very considerable.

The company have recently introduced CRUCIBLES SPECIALLY ADAPTED for the following purposes, viz.:—MALLEABLE IRON MELTING, the average working of which has proved to be about seven days; STEEL MELTING, which are found to save nearly 1½ ton of fuel to every ton of steel fused; and for ZINC MELTING, lasting much longer than the ordinary iron pots, and saving the great loss which arises from mixture with iron.

The Patent Plumbago Crucible Company likewise manufacture and Import Clay Crucibles, Muffles, Portable Furnaces, &c., Stove Backs, all descriptions of fire-standing goods, and every requisite for the Assayer and Dentist.

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ENGINEERS, IRONFOUNDERS, BOILER MAKERS, and MANUFACTURERS OF EVERY DESCRIPTION OF RAILWAY MACHINERY.



**LOCOMOTIVE ENGINES,** for MINERAL and CONTRACTORS' RAILWAYS, of the best materials and workmanship, always in progress. These engines are designed to supply the chief requisites in tank locomotives—viz., reduction of the overhanging weight at the fire-box end, proper distribution of the weight upon the wheels, and keeping the centre of gravity low. These are accomplished by making the fire-box and its shell on an improved principle, which enables the driving axle to be placed further back, without interfering with the eccentrics and valve gear, which are of the usual simple description.

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GERMAN STEEL. WM. GRAVES & SONS  
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Where the largest stock in the world may be selected from.



## THE MINING SHARE LIST

## BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last paid
1200	Alderley Edge (cop.), Cheshire [L.]	10 0 0	—	—	11 3 0	0 15 0—Dec. 1884
4000	Bedford United (cop.), Tavistock [L.]	2 6 8	2 5 0	—	13 11 0	0 2 0—Oct. 1884
1200	Boscawen (tin), Cornwall [L.]	4 15 0	—	—	1 5 0	0 8 0—May, 1884
300	Botalack (tin), Cornwall [L.]	91 5 0	—	—	477 16 0	3 0 0—May, 1884
1200	Brixham Hematite Iron [L.]	6 7 0	—	—	5 10 0	0 15 0—Nov. 1884
1000	Bronzoyd (lead), Cardigan [L.]	12 0 0	—	—	10 0 0	0 15 0—Mar. 1885
916	Cargill (silver-lead), Newlyn [L.]	15 5 7	33	30 32	10 0 0	0 15 0—Mar. 1885
1000	Carn Brea (copper), tin, Illogan [L.]	15 0 0	—	—	280 10 0	2 0 0—June, 1884
3880	Clifford Amalgamated (cop.), Gwent [L.]	30 0 0	30 1/4	30 1/4	34 3 6	0 12 0—Feb. 1885
9000	Copper Mines of England [L.]	25 0 0	—	—	7 1/4	per cent. Half-yrly.
40000	Ditto [L.]	100 0 0	—	—	1	per cent. Half-yrly.
1867	Cwm Edna (lead), Cardiganshire [L.]	7 10 0	—	—	14 15 0	0 1 0—Mar. 1885
128	Cwmystwyth (lead), Cardiganshire [L.]	60 0 0	—	—	275 10 0	4 0 0—Jan. 1885
1200	Durham Mines (sil.-lead), Durham [L.]	300 0 0	—	—	163 0 0	5 0 0—June, 1884
1024	Devon Gt. Con. (cop.), Tavistock [L.]	1 0 0	—	—	252 0 0	10 0 0—Jan. 1885
818	Dolcoath (copper), tin, Camborne [L.]	128 17 6	—	—	750 10 0	5 0 0—Jan. 1885
200	East Basset (cop.), Redruth [L.]	29 10 0	15	12 1/2 15	126 0 0	1 0 0—Nov. 1884
6144	East Caradon (copper), St. Cleer [S.E.]	2 14 6	15	14 1/2 15	12 12 0	0 10 0—Jan. 1885
300	East Darwen (lead), Cardiganshire [L.]	32 0 0	—	—	103 10 0	2 0 0—Feb. 1885
1200	East Pool (tin), copper, Pool, Illogan [L.]	24 8 0	—	—	369 10 0	4 0 0—June, 1884
1200	East Rosewarne (copper), Pool, Illogan [L.]	3 15 0	—	—	0 4 6	0 2 0—Feb. 1885
1806	East Wheal Lovell (tin), Wendron [L.]	2 18 6	10 1/4	11 1/4 11 1/4	1 10 0	0 16 0—May, 1884
1200	Foxdale (lead), Isert, M.L. [L.]	25 0 0	—	—	65 0 0	1 0 0—Jan. 1885
1200	Frank Mills (lead), Christow [L.]	25 0 0	—	—	2 0 6	0 10 0—Feb. 1885
19100	Great Laxey (lead), Isle of Man [L.]	5 18 6	6 1/4	6 1/4 6 1/4	2 0 6	0 10 0—Feb. 1885
4908	Great Wh. Vor (tin), cop., Helston [S.E.]	40 0 0	34 1/2	32 32 1/2	2 1 0	0 10 0—Mar. 1885
119	Great Work (tin), Gernoe [L.]	100 0 0	—	—	15 0 0	0 5 0—Dec. 1884
1024	Herodotus (tin), near Liskeard [S.E.]	8 10 0	—	—	31 10 0	1 15 0—Feb. 1885
400	Lisaboe (lead), Cardiganshire, Wales [L.]	18 16 0	—	—	430 10 0	3 0 0—Feb. 1885
2000	Maes-y-Safn (lead), Llanidloes [L.]	20 0 0	—	—	1 0 0	1 0 0—Oct. 1884
9000	Marke Valley (copper), Cardon [L.]	4 10 6	5	4 1/2 5 1/4	2 18 0	0 2 6—Jan. 1885
9000	Miners Boundary (lead), Wrexham [L.]	1 0 0	—	—	0 6 0	0 2 0—Mar. 1885
1800	Miners Mining Co. [L.] (id.), Wrexham [L.]	25 0 0	—	—	169 18 0	7 12 0—Jan. 1884
20000	Miners of Ireland (cop.), lead, coal [L.]	7 0 0	—	—	16 19 7	0 13 0—Jan. 1884
40000	Mt. Pleasant (lead), M.L. [L.]	2 0 0	—	—	0 4 0	0 2 0—April, 1884
250	Nanty Mines (lead), Montgomery [L.]	20 0 0	—	—	0 11 0	1 6 0—June, 1884
4000	New Birch Tor and Vitrifer Con. (tin), L.	1 6 0	—	—	0 13 0	0 2 6—Feb. 1885
8938	North Treaskerby (copper), St. Agnes [L.]	1 9 0	2 1/4	2 3/4 2 3/4	135 0 0	12 10 0—Jan. 1885
300	Parys Mines (copper), Anglesey [L.]	50 0 0	—	—	76 5 0	1 0 0—Feb. 1885
1130	Providence (tin), Uny Lelant [S.E.]	10 6 7	32	29 31	467 10 0	8 0 0—Jan. 1885
612	South Caradon (cop.), St. Cleer [S.E.]	1 5 0	—	—	0 5 0	0 5 0—Mar. 1884
9000	St. Day United (tin), Redruth [L.]	14 0 0	—	—	490 10 0	0 10 0—May, 1884
800	St. Ives Consols (tin), St. Ives [L.]	8 0 0	—	—	16 1 0	0 10 0—Dec. 1884
9000	Tincroft (cop.), tin, Pool, Illogan [S.E.]	8 0 0	14	14 1/2 15 1/4	26 3 0	0 5 0—Jan. 1885
8000	West Basset (copper), Illogan [S.E.]	1 10 0	—	—	53 10 0	0 1 0—Feb. 1884
8000	W. Chiverton (id.), Ferranabullos [S.E.]	63	—	—	45 10 0	0 1 0—Feb. 1884
285	West Damsel (copper), Gwennap [L.]	38 10 0	—	—	425 0 0	4 0 0—Feb. 1884
400	W. Wh. Seton (cop.), Camborne [S.E.]	47 10 0	195	190 195	606 10 0	2 0 0—Feb. 1884
512	Wheal Basset (copper), Illogan [S.E.]	5 2 6	105	100 105	15 0 0	0 10 0—Aug. 1884
512	Wheal Jane (silver-lead), Kea [L.]	8 10 0	—	—	2 6 0	0 8 0—July, 1884
4285	Wheal Kitty (tin), St. Agnes [L.]	5 4 6	—	—	49 17 6	0 10 0—Mar. 1885
1024	Wheal Kitty (tin), Uny Lelant [S.E.]	2 0 0	—	—	288 5 0	4 0 0—Mar. 1885
1024	Wheal Mary Ann (id.), Menheniot [S.E.]	8 0 0	—	—	243 8 0	5 0 0—May, 1884
100	Wheal Mary (tin), Lelant [L.]	36 2 6	—	—	121 15 0	4 0 0—Feb. 1885
800	Wheal Owles (tin), St. Just, Cornwall [L.]	70 0 0	—	—	61 10 0	0 10 0—Mar. 1884
396	Wheal Seton (copper), Camborne [S.E.]	53 10 0	202 1/2	197 1/2 202 1/2	14 17 0	0 6 0—Oct. 1884
1040	Wh. Trevelyan (sil.-id.), Liskeard [S.E.]	8 17 0	20 1/2	19 1/2 20	—	—
7000	Wicklow (copper) [L.], Wicklow [L.]	2 10 0	—	—	—	—

\* Dividends paid every two months. † Dividends paid every three months.

## BRITISH MINES WITH DIVIDENDS IN ABEYANCE.

340	Boscan (tin), St. Just [L.]	30 10 0	—	—	36 10 0	1 0 0—Mar. 1882
3000	Chiverton (lead), Ferranabullos [S.E.]	5 0 0	—	—	83 0 0	2 0 0—June, 1887
286	Conduff (cop.), tin, Camborne [L.]	76 10 0	55	50 55	1 7 0	0 7 0—May, 1882
1024	Copper Hill (copper), Redruth [L.]	18 5 9	6 1/4	5 1/4 6	2 7 6	—
1056	Cradock Moor (copper), St. Cleer [L.]	12 0 0	—	—	0 12 0	0 4 0—July, 1882
4076	Devon and Cornwall (cop.), Tavistock [L.]	6 8 0	—	—	0 18 0	0 1 6—May, 1882
12800	Drake Walls (tin), copper, Calstock [L.]	2 1 0	—	—	0 17 0	0 2 6—Jan. 1886
8000	Drynigwen (lead), Wales [L.]	12 6 6	—	—	41 9 0	2 0 6—June, 1886
840	Fowey Consols (copper), Tywarreath [L.]	4 7 6	—	—	7 18 6	0 5 0—Dec. 1881
4000	Great South Tolu (copper), Redruth [L.]	0 14 6	2 1/4	2 1/4 2	5 15 0	0 10 0—Nov. 1883
1798	Great Wheal Fortune (tin), Breage [L.]	19 12 0	2	1 1/2 2	0 3 0	0 1 6—Mar. 1886
10240	Gunnislake (Chiters' Adit) (copper), L.	0 2 0	—	—	0 10 0	0 5 0—May, 1886
1000	Levant (copper), tin, St. Just [L.]	2 10 0	—	—	18 1 0	0 7 6—Aug. 1882
840	Mount Pleasant (lead), M.L. [L.]	2 0 0	—	—	86 19 0	0 2 6—Mar. 1882
8000	Orehead (lead), Flintshire [L.]	0 0 0	—	—	7 19 6	0 10 0—Nov. 1882
4600	Par Consols (cop.), St. Blazey [S.E.]	1 3 6	—	—	0 10 0	0 1 0—July, 1883
1772	Polberro (tin), St. Agnes [L.]	15 0 0	—	—	0 10 0	0 1 6—June, 1883
612	Polberro (tin), St. Agnes [L.]	8 0 0	—	—	0 5 0	0 5 0—Dec. 1882
8000	Rosewell Hill and Ransom United [L.]	3 10 0	—	—	72 10 0	1 0 0—May, 1883
8000	South Exmouth (lead), Christow [L.]	2 0 0	—	—	370 18 0	1 0 0—Nov. 1883
612	South Tolu (cop.), Redruth [L.]	8 0 0	24	21 23	9 18 0	1 0 0—June, 1882
496	S. Wh. Frances (cop.), Illogan [S.E.]	18 8 0	45	—	7 0 0	0 10 0—Sept. 1882
380	Spears' Copper (tin), St. Just [L.]	32 10 0	—	—	11 0 0	2 0 0—Mar. 1882
1024	Trevelyan Consols (tin), near Helston [L.]	11 10 0	—	—	—	—
1000	Trumpet Consols (tin), near Helston [L.]	11 10 0	—	—	—	—
12000	Twelve Apostles Amal. (id.), Wrexham [L.]	1 0 0	—	—	—	—
4200	Vigna and Clogau (copper) [L.]	5 0 0	—	—	6 3 6	1 10 0—Mar. 1884
1024	Wendron Consols (tin), Wendron [L.]	30 18 0	—	—	8 15 0	1 0 0—Jan. 1881
60	West Burton Gill (lead), Yorkshire [L.]	60 0 0	—	—	14 10 0	3 0 0—June, 1881
1024	Wheal Caradon (cop.), Liskeard [S.E.]	9 0 0	—	—	101 12 0	0 10 0—Oct. 1882
1000	Wheal Basset and Grylls (tin) [L.]	7 0 0	—	—	3 0 0	0 10 0—Oct. 1883
1024	Wheal Friendship (copper), Devon [L.]	20 0 0	—	—	285 10 0	5 0 0—Feb. 1881
486	Wheal Margaret (tin), Uny Lelant [S.E.]	18 17 0	—	—	76 5 0	1 0 0—May, 1883
280	Wheal Trevelyan (tin), Gwennap [L.]	11 11 0	—	—	6 13 0	0 6 0—Nov. 1883
8400	West Fowey Consols (tin and copper) [L.]	7 10 0	—	—	0 19 0	0 3 0—May, 1882

## FOREIGN DIVIDEND MINES.

30000	Australian (cop.), S. Australia [S.E.]	7 7 6	—	—	0 1 0	0 1 0—Dec. 1883
2444	Burra Burra (cop.), South Australia [L.]	5 0 0	—	—	320 0 0	5 0 0—Sept. 1884
6000	Central American (silver) [L.]	5 0 0	—	—	4 8 0	0 14 10—Dec. 1883
16000	Cape Copper Mining [L.] (S.E.)	11 1/4	10 1/4 11 1/4	—	0 15 0	0 5 0—Sept. 1884
10000	Cobra Copper Co. (cop.), Cuba [L.]	40 0 0	27	25 27	0 10 0	1 0 0—Jan. 1885
100000	Don Pedro No. Del Rey [L.] (S.E.)	0 12 6	—	—	0 9 0	0 9 0—Dec. 1883
70000	English and Australian [L.]	5 0 0	—	—	1 13 0	0 2 0—Aug. 1884
18000	East Indian Coal, Calcutta [L.]	10 0 0	—	—	7 1/4	per cent. Yearly.
30000	Fortuna (lead), Spain [L.] (S.E.)	2 0 0	3 1/4	2 3/4 3 1/4	0 14 4	0 3 0—June, 1884
20000	Gen. Mining Assoc., Nova Scotia [S.E.]	320 0 0	24	22 24	21 10 0	1 0 0—June, 1884
80000	Kapunda Mining Co., Australia [S.E.]	1 0 0	1	3 1	0 12 0	0 1 0—June, 1884
16000	Linares (lead), Spain [L.] (S.E.)	3 0 0	6	4 1/4 5 1/4	11 6 4	0 4 0—Jan. 1885
10000	Lustanion (Portugal) [S.E.]	2 0 0	2	1 1/2 2	1 4 0	0 3 0—Jan. 1885
9728	New Widdow (copper) [L.]	3 0 0	—	—	0 10 0	0 10 0—Aug. 1884
10000	Pontgibaud (sil.-lead), France [S.E.]	320 0 0	—	—	2 3 0	0 16 0—Yearly.
97500	Port Phillip (gold), Clunes [S.E.]	1 0 0	1 1/4	3 1/4 1 1/4	0 12 6	0 1 0—July, 1884
11000	St. John del Rey [L.], Brazil [S.E.]	15 0 0	34	32 34	63 15 0	2 10 0—June, 1884
43174	United Mexican (sil.), Mexico [S.E.]	28 5 0	4 1/4	4 1/4	2 19 0	0 5 0—Sept. 1884
10000	Vancouver (coal) [L.] (id.)	5 0 0	5 1/4	4 1/4 5 1/4	0 15 0	0 5 0—Nov. 1884
50000	Victoria (London) Mining Co. [L.]	1 0 0	—	—	0 7 0	0 5 0—Jan. 1885
20000	West Canada Mining Company [L.]	1 0 0	—	—	0 17 0	0 5 0—Dec. 1884
48000	Yuanamutana (cop.), S. A. [L.] (S.E.)	3 0 0	2	1 1/2 2	0 5 0	0 5 0—Aug. 1883

## FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

10000	Altan and Quensenen Unt. (cop.) [L.] (S.E.)	4 10 0	—	—	4 5 0	0 15 0—Nov. 1882
10000	Coplaop Mining Company, Chile [L.] (S.E.)	16 0 0	—	—	6 18 0	0 10 0—Nov. 1882
10000	El Barrio Land, Min., Ac., N. Ze. [L.]	26 0 0	—	—	15	per cent. May, 1885
10000	Marquitas and New Granada [S.E.]	1 0 0	—	—	0 9 6	0 1 6—July, 1885

## NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
10000	Alamillos (lead), Spain [L. £2] [S.E.]	1 5 0	1 1/4	1 1/4	Sept. 1864
30000	Anglo-Brazilian (gold) [L.] [S.E.]	0 5 0	—	—	Dec. 1863
20000	Beairston Tin Streaming Company [L. £1]	0 17 6	—	—	Oct. 1863
50000	Capula (silver), Mexico [L. £2] [S.E.]	1 5 0	1 1/4	1 1/4	Feb. 1864
17000	Central Italian (copper) [L. £20 £3 paid]	0 6 0	—	—	Jan. 1859
10000	Copapo Smelting [L.], New Zealand [L.] [S.E.]	10 0 0	—	—	Fully paid.
76000	Dun Mountain (copper), New Zealand [L.] [S.E.]	2 0 0	1 1/4	1 1/4	Fully paid.
50000	East del Rey (gold), Brazil [L. £2] [S.E.]	2 0 0	1 1/4	1 1/4	Feb. 1865
15000	El Chico Silver Mining and Reduction Company [L.]	3 0 0	—	—	Fully paid.
8000	English and Canadian Mining Company [L.]	8 0 0	—	—	Fully paid.
40000	Fortune (copper), West Australia [L.]	2 0 0	—	—	Fully paid.
20000	Frontino and Bolivia (gold), New Granada [L. £2] [S.E.]	1 0 0	—	—	Mar. 1865
80000	Great Northern (copper), South Australia [L. £2] [S.E.]	1 10 0	—	—	June, 1862
24000	Hindostan (copper), Bengal [L. £3]	3 0 0	—	—	Feb. 1863
4000	Hope Silver-Lead and Copper Mining Co. [L.], Jamaica	25 0 0	—	—	Fully paid.
130000	Lagunazo (sulphur, copper), Portugal [L.]	1 0 0	—	—	Fully paid.
60000	Montes Aures (gold), Brazil [L.] [S.E.]	2 0 0	3/4	3/4	Fully paid.
50000	Nova Scotia (land and gold) [L. £2]	1 0 0	—	—	Nov. 1862
10000	Otea (copper) New Zealand [L. £2]	0 15 0	—	—	Sept. 1864
16000	Pacheco Silver Mining Company, Mexico [L. £1]	1 0 0	—	—	June, 1863
4000	Peel River Lead and Mineral [Limited]	200 0 0	—	—	Stock.
20000	Quebrada (copper), Venezuela [L. £10]	6 10 0	4	4 1/2	Sept. 1864
30000	Rio Grande (copper), Brazil [L. £1] [S.E.]	0 5 0	—	—	April, 1864
10000	San Roque (lead), Spain	8 0 0	—	—	Fully paid.
20000	Santa Barbara (gold), Brazil [L.] [S.E.]	0 0 0	3/4	3/4	Sept. 1864
80000	Scottish Australian Mining Company [L.]	0 17 6	—	—	Feb. 1864
16000	South Europe Mining Company, Spain [L. £2]	5 0 0	—	—	Fully paid.
12000	Topitita Colliery Co., Bohemia [L. £2]	3 0 0	—	—	June, 1863
20000	Valdemard Mining Company [L. £20]	10 0 0	—	—	Oct. 1864
50000	Vallananza (gold), Italy [L. £1] [S.E.]	0 10 0	1 1/4	1 1/4	Oct. 1864
40000	Victor Emanuel (copper), Italy [L.]	1 0 0	—	—	Fully paid.
20000	Washoe (gold) [10000 £5 paid, 10000 £3 paid]	—	—	—	—
1000	Western Africa Malachite (copper) [L.]	110 0 0	—	—	Oct. 1862
12500	Wheal Ellen (copper), South Australia [L.]	5 0 0	—	—	Fully paid.
50000	Wetherby (copper), South Australia [L.] [S.E.]	1 0 0	3/4	3/4	Fully paid.
75000	Yorke Peninsula, South Australia [L. £1]	1 0 0	3/4	3/4	Fully paid.